



# **FIXED-FREQUENCY U-MATCH AIR CONDITIONERS SERVICE MANUAL**

**T3/R22/50Hz  
(GC201204-I)**

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# PRODUCT





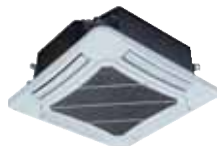
## PRODUCT

### 1 MODELS LIST

#### 1.1 Outdoor Unit

Model	Code	Ref.	Power Supply	Appearance
GUHN24TK1AO	CF021W0411	R22	220-240V 1PH 50Hz	
GUCN24TK1AO	CF021W1401			
GUHN30TK1AO	CF021W0421	R22	220-240V 1PH 50Hz	
GUCN30TK1AO	CF021W1411			
GUHN36TK1AO	CF021W0430	R22	220-240V 1PH 50Hz	
GUCN36TK1AO	CF021W1420			
GUHN36TM1AO	CF021W0441	R22	380-415V 3PH 50Hz	
GUCN36TM1AO	CF021W1431			
GUHN42TM1AO	CF021W0451	R22	380-415V 3PH 50Hz	
GUCN42TM1AO	CF021W1441			
GUHN48TM1AO	CF021W0461	R22	380-415V 3PH 50Hz	
GUCN48TM1AO	CF021W1451			
GUHN60TM1AO	CF021W0470	R22	380-415V 3PH 50Hz	
GUCN60TM1AO	CF021W1460			

## 1.2 Indoor Unit

Type	Model	Code	Nominal Capacity Cooling/Heating (Btu/h)	Ref.	Power Supply	Appearance
Duct	GFH24TK1BI	CF022N0191	24000/25600	R22	220-240V 50Hz -1PH	
	GFH30TK1BI	CF022N0201	27500/32500			
	GFH36TK1BI	CF022N0181	34100/40000			
	GFH42TK1BI	CF022N0211	41000/47800			
	GFH48TK1BI	CF022N0221	48000/51000			
	GFH60TK1BI	CF022N0290	54000/56000			
Cassette	GKH24TK1BI	ET010N0260	23200/24900	R22	220-240V 50Hz -1PH	
	GKH30TK1BI	ET010N0270	28600/32073			
	GKH36TK1BI	ET010N0280	34100/40000			
	GKH42TK1BI	ET010N0290	39215/42625			
	GKH48TK1BI	ET010N0300	48000/50500			
	GKH24TK1B2I	ET010N0650	23200/24900			
	GKH30TK1B2I	ET010N0610	28600/32073			
	GKH36TK1B2I	ET010N0620	34100/40000			
	GKH42TK1B2I	ET010N0630	39215/42625			
	GKH48TK1B2I	ET010N0640	48000/50500			

Note: 1Ton = 12000Btu/h = 3.517kW

### NOTES:

The universal outdoor units mean that the customer can choose any of three kinds of indoor units to match the outdoor unit without any change.

\*Three kinds of units

F=Duct Type

K=Cassette Type

T=Floor Ceiling Type

## 2 NOMENCLATURE

### 2.1 OUTDOOR UNIT

G	U	H	N	30	T	K	1	A	O
1	2	3	4	5	6	7	8	9	10

NO.	Description	Options
1	Gree Electric Appliances Inc	Capital Letter :G
2	Unit Type	U=Match Outdoor Unit F=Duct Type K=Cassette Type T=Floor Ceiling Type
3	Product Type	C=Cool Only H=Heat Pump without Aux Electric Heaters
4	Compressor Type	N=Constant Frequency D=DC Inverter A=AC Inverter
5	Nominal Cooling Capacity	Nominal Cooling Capacity =Number×1000Btu/h
6	Climate Type	N=Climate T1 Condition T= Climate T3 Condition
7	Power Supply Code	K=1Ph 220~240V 50HZ M=3Ph 380~415V 50HZ
8	Refrigerant	1 =R22 2=R407C 3=R410A
9	Design Code	Design Code:A,B,C,D,.....
10	Unit Code for Condensing Unit	O=Outdoor

### 2.2 INDOOR UNIT

G	F	H	30	T	K	1	B2	I
1	2	3	4	5	6	7	8	9

NO.	Description	Options
1	Gree Electric Appliances Inc	Capital Letter :G
2	Unit Type	F=Duct Type K=Cassette Type T=Floor Ceiling Type
3	Product Type	C=Cool Only H=Heat Pump without Aux Electric Heaters
4	Nominal Cooling Capacity	Nominal Cooling Capacity =Number×1000Btu/h
5	Climate Type	N=Climate T1 Condition T= Climate T3 Condition
6	Power Supply Code	K=1Ph 220~240V 50HZ M=3Ph 380~415V 50HZ
7	Refrigerant	1 =R22 2=R407C 3=R410A
8	Design Code	Design Code: A,B,C,D,.....; A2,B2,C2,D2,.....
9	Unit Code for Indoor Unit	I=Indoor Unit

### 3 FUNCTION

Function	Description
Memory function	when unit restart after power off, it will run on former status, the mode and parameter are kept the same
Remote control function	wireless controller and remote controller can be opted, and the maximum control distance of remote controller is 10m.
Timing function	it can timing ON/ OFF separately, meanwhile, it can also can timing on circularly
Self-diagnosis with alarm function	once unit has malfunction, the malfunction code will be indicated.
Sleep function	it can self control for saving energy in energy saving mode.
Automatic function	the fan of indoor unit can adjust fan speed automatically based on actual demand when cooling or heating under automatic mode
Cool air proof function	the fan starts only when the temperature of indoor unit heat exchanger is higher than indoor temperature under heating mode
Weekly Timer	centralized Control and Week Timer Functions: The centralized controller and the weekly timer are integrated in the same wire controller. The system has both the centralized control and the week timing functions. Up to 16 sets of units can be controlled simultaneously by the centralized controller (weekly timer). The weekly timer has the function of invalidating the lower unit. The weekly timing function is able to realized four timing ON/OFF periods for any unit every day, so as to achieve fully automatic operation. No timing control can be set for holidays.
High/low pressure protection	when suction pressure is too low or discharge pressure is too high, compressor will stop and unit display malfunction code
Overload protection	compressor has its own overheat protection, once the temperature of compressor is higher than allowable level, compressor will stop and only when temperature recovery, compressor restart
Over current protection	once the current of compressor is higher that normal level, compressor will stop and unit display malfunction code
Discharge high temperature protection	once the discharge temperature of compressor is higher than allowable value, compressor will stop and unit display malfunction code
Reverse (open) phase protection	once the phase sequence of power supply is incongruent or the phase is absent, unit can't work.
Anti-high temperature protection	once the heat exchanger temperature of indoor unit is too high, fan of outdoor stop.
Timing ON/OFF display	display and timing turn ON/OFF time (only with wired controller have this function)
Fan speed display	display the speed (high, medium, low) of fan (only with wired controller have this function)
Function model display	cooling mode, dehumidifying mode, heating mode, fan mode (only with wired controller have this function)
Testing display	display testing mode (only with wired controller have this function)
Temperature display	display room temperature and set temperature (with wired controller or remoter board have this function)

## 4 PRODUCT DATA

### 4.1 Product Data at Rated Condition

Model	Indoor unit		GFH24TK1BI	GFH24TK1BI
	Product Code		CF022N0191	CF022N0191
	Outdoor unit		GUHN24TK1AO	GUCN24TK1AO
	Product Code		CF021W0411	CF021W1401
Nominal Capacity	Cooling	kW	7.0	7.0
		Btu/h	24000	24000
	Heating	kW	7.5	–
		Btu/h	25600	–
Power Input	Cooling	kW	2.7	2.7
	Heating	kW	2.6	–
EER/COP		W/W	2.59/2.88	2.59
Indoor Unit			GFH24TK1BI	GFH24TK1BI
Power Supply		–	220-240V 1Ph 50Hz	
Heat Exchange		–	Cross Fin Coil	
Fan	Type	–	Centrifugal fan -2	
	Drive	–	Direct	
	Motor Output	kW	0.224×1	
	Air Flow	m <sup>3</sup> /h	1600/1400/1200	
	Ext. Static Pressure	Pa	25	
Sound Pressure Level (H/M/L)		dB(A)	47/44/42	
Drain Piping		mm	φ20×1.2	
Dimensions (W×D×H)	Outline	mm	1345×594×268	
	Package	mm	1348×597×283	
Weight (Net/Gross)		kg	36/42	
Outdoor Unit			GUHN24TK1AO	GUCN24TK1AO
Power Supply		–	220-240V 1Ph 50Hz	
Heat Exchange		–	Cross Fin Coil	
Fan	Type	–	Axial fan	
	Motor Output	kW	0.093×1	
	Fan Motor Speed	rpm	940/510	
Compressor	Type	–	ROTARY	
	Power input	kW	2.39	
Refrigerant	Type	–	R22	
	Control	–	Capillary Tube	
	Charge	kg	2.5	
Dimensions (W×D×H)	Outline	mm	1018×412×695	
	Package	mm	1103×453×770	
Weight (Net/Gross)		kg	67/71	66/70
Piping Connections	Liquid	Inch	3/8"	
	Gas	Inch	5/8"	
	Max. Length	m	30	
	Max. Height Difference	m	15	

Continued

Model	Indoor unit		GFH30TK1BI	GFH30TK1BI
	Product Code		CF022N0201	CF022N0201
	Outdoor unit		GUHN30TK1AO	GUCN30TK1AO
	Product Code		CF021W0421	CF021W1411
Nominal Capacity	Cooling	kW	8.1	8.1
		Btu/h	27500	27500
	Heating	kW	9.5	–
		Btu/h	32500	–
Power Input	Cooling	kW	3.2	3.2
	Heating	kW	3.55	–
EER/COP		W/W	2.53/2.67	2.53
Indoor Unit			GFH30TK1BI	GFH30TK1BI
Power Supply		–	220-240V 1Ph 50Hz	
Heat Exchange		–	Cross Fin Coil	
Fan	Type	–	Centrifugal fan-2	
	Drive	–	Direct	
	Motor Output	kW	0.224×1	
	Air Flow	m <sup>3</sup> /h	1500/1300/1100	
	Ext. Static Pressure	Pa	37	
Sound Pressure Level (H/M/L)		dB(A)	47/44/42	
Drain Piping		mm	φ20×1.2	
Dimensions (W×D×H)	Outline	mm	1270×530×268	
	Package	mm	1348×597×283	
Weight (Net/Gross)		kg	36/42	
Outdoor Unit			GUHN30TK1AO	GUCN30TK1AO
Power Supply		–	220-240V 1Ph 50Hz	
Heat Exchange		–	Cross Fin Coil	
Fan	Type	–	Axial fan	
	Motor Output	kW	0.127×1	
	Fan Motor Speed	rpm	780/500	
Compressor	Type	–	ROTARY	
	Power input	kW	3.05	
Refrigerant	Type	–	R22	
	Control	–	Capillary Tube	
	Charge	kg	3.4	
Dimensions (W×D×H)	Outline	mm	980×427×790	
	Package	mm	1083×488×855	
Weight (Net/Gross)		kg	74/78	73/77
Piping Connections	Liquid	Inch	3/8"	
	Gas	Inch	5/8"	
	Max. Length	m	30	
	Max. Height Difference	m	15	

Continued 1

Model	Indoor unit		GFH36TK1BI	GFH36TK1BI
	Product Code		CF022N0181	CF022N0181
	Outdoor unit		GUHN36TK1AO	GUCN36TK1AO
	Product Code		CF021W0430	CF021W1420
Nominal Capacity	Cooling	kW	10	10
		Btu/h	34100	34100
	Heating	kW	11.72	—
		Btu/h	40000	—
Power Input	Cooling	kW	4.25	4.25
	Heating	kW	3.65	—
EER/COP		W/W	2.35/3.21	2.35
Indoor Unit			GFH36TK1BI	GFH36TK1BI
Power Supply		—	220-240V 1Ph 50Hz	
Heat Exchange		—	Cross Fin Coil	
Fan	Type	—	Centrifugal fan-2	
	Drive	—	Direct	
	Motor Output	kW	0.507×1	
	Air Flow	m <sup>3</sup> /h	2000/1900/1800	
	Ext. Static Pressure	Pa	37	
Sound Pressure Level (H/M/L)		dB(A)	52/50/48	
Drain Piping		mm	φ20×1.2	
Dimensions (W×D×H)	Outline	mm	1226×775×290	
	Package	mm	1338×837×305	
Weight (Net/Gross)		kg	53/61	
Outdoor Unit			GUHN36TK1AO	GUCN36TK1AO
Power Supply		—	220-240V 1Ph 50Hz	
Heat Exchange		—	Cross Fin Coil	
Fan	Type	—	Axial fan	
	Motor Output	kW	0.093×1	
	Fan Motor Speed	rpm	920/-/780	
Compressor	Type	—	SCROLL	
	Power input	kW	3.7	
Refrigerant	Type	—	R22	
	Control	—	Capillary Tube	
	Charge	kg	3.5	
Dimensions (W×D×H)	Outline	mm	1018×412×840	
	Package	mm	1103×453×1000	
Weight (Net/Gross)		kg	92/100	91/99
Piping Connections	Liquid	Inch	1/2"	
	Gas	Inch	3/4"	
	Max. Length	m	50	
	Max. Height Difference	m	30	

## Continued 2

Model	Indoor unit		GFH36TK1BI	GFH36TK1BI
	Product Code		CF022N0181	CF022N0181
	Outdoor unit		GUHN36TM1AO	GUCN36TM1AO
	Product Code		CF021W0441	CF021W1431
Nominal Capacity	Cooling	kW	10	10
		Btu/h	34100	34100
	Heating	kW	11.72	–
		Btu/h	40000	–
Power Input	Cooling	kW	4.1	4.1
	Heating	kW	3.7	–
EER/COP		W/W	2.44/3.17	2.44
Indoor Unit			GFH36TK1BI	GFH36TK1BI
Power Supply		–	220-240V 1Ph 50Hz	
Heat Exchange		–	Cross Fin Coil	
Fan	Type	–	Centrifugal fan-2	
	Drive	–	Direct	
	Motor Output	kW	0.507×1	
	Air Flow	m <sup>3</sup> /h	2000/1900/1800	
	Ext. Static Pressure	Pa	37	
Sound Pressure Level (H/M/L)		dB(A)	52/50/48	
Drain Piping		mm	φ20×1.2	
Dimensions (W×D×H)	Outline	mm	1226×775×290	
	Package	mm	1338×837×305	
Weight (Net/Gross)		kg	53/61	
Outdoor Unit			GUHN36TM1AO	GUCN36TM1AO
Power Supply		–	380-415V 3Ph 50Hz	
Heat Exchange		–	Cross Fin Coil	
Fan	Type	–	Axial fan	
	Motor Output	kW	0.093×1	
	Fan Motor Speed	rpm	920/-/780	
Compressor	Type	–	SCROLL	
	Power input	kW	3.65	
Refrigerant	Type	–	R22	
	Control	–	Capillary Tube	
	Charge	kg	3.6	3.5
Dimensions (W×D×H)	Outline	mm	1018×412×840	
	Package	mm	1103×453×1000	
Weight (Net/Gross)		kg	90/98	89/97
Piping Connections	Liquid	Inch	1/2"	
	Gas	Inch	3/4"	
	Max. Length	m	50	
	Max. Height Difference	m	30	



Continued:3

Model	Indoor unit		GFH42TK1BI	GFH42TK1BI
	Product Code		CF022N0211	CF022N0211
	Outdoor unit		GUHN42TM1AO	GUCN42TM1AO
	Product Code		CF021W0451	CF021W1441
Nominal Capacity	Cooling	kW	12	12
		Btu/h	41000	41000
	Heating	kW	14	–
		Btu/h	47800	–
Power Input	Cooling	kW	5.2	5.0
	Heating	kW	4.35	–
EER/COP		W/W	2.31/3.21	2.40
Indoor Unit		GFH42TK1BI		
Power Supply		–	220-240V 1Ph 50Hz	
Heat Exchange		–	Cross Fin Coil	
Fan	Type	–	Centrifugal fan-2	
	Drive	–	Direct	
	Motor Output	kW	0.507×1	
	Air Flow	m <sup>3</sup> /h	2000/1900/1800	
	Ext.Static Pressure	Pa	37	
Sound Pressure Level (H/M/L)		dB(A)	52/50/48	
Drain Piping		mm	φ20×1.2	
Dimensions (W×D×H)	Outline	mm	1226×775×290	
	Package	mm	1338×837×305	
Weight (Net/Gross)		kg	53/61	
Outdoor Unit		GUHN42TM1AO		GUCN42TM1AO
Power Supply		–	380-415V 3Ph 50Hz	
Heat Exchange		–	Cross Fin Coil	
Fan	Type	–	Axial fan	
	Motor Output	kW	0.149×1	
	Fan Motor Speed	rpm	820	
Compressor	Type	–	SCROLL	
	Power input	kW	4.3	
Refrigerant	Type	–	R22	
	Control	–	Capillary Tube	
	Charge	kg	3.05	
Dimensions (W×D×H)	Outline	mm	1107×440×1100	
	Package	mm	1158×483×1235	
Weight (Net/Gross)		kg	96/105	94/104
Piping Connections	Liquid	Inch	1/2"	
	Gas	Inch	3/4"	
	Max. Length	m	50	
	Max. Height Difference	m	30	

Continued:4

Model	Indoor unit		GFH48TK1BI	GFH48TK1BI
	Product Code		CF022N0221	CF022N0221
	Outdoor unit		GUHN48TM1AO	GUCN48TM1AO
	Product Code		CF021W0461	CF021W1451
Nominal Capacity	Cooling	kW	14	14
		Btu/h	48000	48000
	Heating	kW	15	–
		Btu/h	51000	–
Power Input	Cooling	kW	6.0	5.76
	Heating	kW	5.6	–
EER/COP		W/W	2.33/2.68	2.41
Indoor Unit		GFH48TK1BI		
Power Supply		–	220-240V 1Ph 50Hz	
Heat Exchange		–	Cross Fin Coil	
Fan	Type	–	Centrifugal fan-2	
	Drive	–	Direct	
	Motor Output	kW	0.567×1	
	Air Flow	m <sup>3</sup> /h	2300/2110/1850	
	Ext. Static Pressure	Pa	50	
Sound Pressure Level (H/M/L)		dB(A)	53/50/46	
Drain Piping		mm	φ30×1.5	
Dimensions (W×D×H)	Outline	mm	1226×775×290	
	Package	mm	1338×837×305	
Weight (Net/Gross)		kg	55/63	
Outdoor Unit		GUHN48TM1AO		GUCN48TM1AO
Power Supply		–	380-415V 3Ph 50Hz	
Heat Exchange		–	Cross Fin Coil	
Fan	Type	–	Axial fan	
	Motor Output	kW	0.149×1	
	Fan Motor Speed	rpm	820	
Compressor	Type	–	SCROLL	
	Power input	kW	5.35	
Refrigerant	Type	–	R22	
	Control	–	Capillary Tube	
	Charge	kg	5.0	
Dimensions (W×D×H)	Outline	mm	1107×440×1100	
	Package	mm	1158×493×1235	
Weight (Net/Gross)		kg	108/117	107/116
Piping Connections	Liquid	Inch	1/2"	
	Gas	Inch	3/4"	
	Max. Length	m	50	
	Max. Height Difference	m	30	

Continued:5

Model	Indoor unit		GFH60TK1BI	GFH60TK1BI
	Product Code		CF022N0290	CF022N0290
	Outdoor unit		GUHN60TM1AO	GUCN60TM1AO
	Product Code		CF021W0470	CF021W1460
Nominal Capacity	Cooling	kW	15	15
		Btu/h	52000	52000
	Heating	kW	16.5	–
		Btu/h	5600	–
Power Input	Cooling	kW	6.0	6.0
	Heating	kW	5.5	–
EER/COP		W/W	2.3/3.3	2.3
Indoor Unit			GFH60TK1BI	
Power Supply		–	220-240V 1Ph 50Hz	
Heat Exchange		–	Cross Fin Coil	
Fan	Type	–	Centrifugal fan-2	
	Drive	–	Direct	
	Motor Output	kW	0.567×1	
	Air Flow	m <sup>3</sup> /h	2500	
	Ext. Static Pressure	Pa	50	
Sound Pressure Level (H/M/L)		dB(A)	53/50/48	
Drain Piping		mm	φ30×1.5	
Dimensions (W×D×H)	Outline	mm	1226×815×330/	
	Package	mm	1338×885×345	
Weight (Net/Gross)		kg	65/76	
Outdoor Unit			GUHN60TM1AO	GUCN60TM1AO
Power Supply		–	380-415V 3Ph 50Hz	
Heat Exchange		–	Cross Fin Coil	
Fan	Type	–	Axial fan	
	Motor Output	kW	0.149×2	
	Fan Motor Speed	rpm	940	
Compressor	Type	–	SCROLL	
	Power input	kW	5.35	
Refrigerant	Type	–	R22	
	Control	–	Capillary Tube	
	Charge	kg	4.9	
Dimensions (W×D×H)	Outline	mm	1032×412×1250/	
	Package	mm	1113×453×1400	
Weight (Net/Gross)		kg	113/124	112/123
Piping Connections	Liquid	Inch	φ1/2"	
	Gas	Inch	φ3/4"	
	Max. Length	m	50	
	Max. Height Difference	m	30	

Continued:6

Models	Indoor unit		GKH24TK1BI
	Product Code		ET010N0260
	Outdoor unit		GUHN24TK1AO
	Product Code		CF021W0411
Nominal Capacity	Cooling	kW	6.8
		Btu/h	23200
	Heating	kW	7.3
		Btu/h	24900
Power Input	Cooling	kW	2.5
	Heating	kW	2.6
EER/COP		W/W	2.72/2.81
Indoor Unit			GKH24TK1BI
Power Supply		-	220-240V-50Hz-1Ph
Heat Exchange		-	Cross Fin Coil
Fan	Type	-	Centrifugal fan
	Drive	-	direct
	Motor Output	kW	0.03×1
	Air Flow	m <sup>3</sup> /h	1400/1270/1170
	Ext. Static Pressure	Pa	0
Sound Pressure Level (H/M/L)		dB(A)	51/49/48
Air Filter		-	Standard washable synthetic
Drain Piping		mm	φ32×3
Dimensions (W×D×H)	Outline	mm	840×840×240
	Package	mm	963×963×325
Panel Dimensions (W×D×H)	Outline	mm	950×950×60
	Package	mm	1028×1043×130
Weight (Net/Gross)		kg	27/36
Outdoor Unit			GUHN24TK1AO
Power Supply		-	220-240V-50Hz-1Ph
Heat Exchange		-	Cross Fin Coil
Fan	Type	-	Centrifugal fan
	Motor Output	kW	0.093×1
	Fan Motor Speed	rpm	940/510
Compressor	Type	-	ROTARY
	Motor Output	kW	2.39
Refrigerant	Type	-	R22
	Control	-	Capillary Tube
	Charge	kg	2.5
Dimensions (W×D×H)	Outline	mm	1018×412×695
	Package	mm	1103×453×770
Weight (Net/Gross)		kg	67/71
Piping Connections	Liquid	Inch	φ3/8"
	Gas	Inch	φ5/8"
	Max. Length	m	30
	Max. Height Difference	m	15

Continued:7

Models	Indoor unit		GKH30TK1BI	GKH30TK1BI
	Product Code		ET010N0270	ET010N0270
	Outdoor unit		GUHN30TK1AO	GUCN30TK1AO
	Product Code		CF021W0421	CF021W1411
Nominal Capacity	Cooling	kW	8.4	8.7
		Btu/h	28600	29684
	Heating	kW	9.4	—
		Btu/h	32073	—
Power Input	Cooling	kW	3.2	3.2
	Heating	kW	3.2	—
EER/COP		W/W	2.62/8.94	2.72
Indoor Unit			GKH30TK1BI	GKH30TK1BI
Power Supply		—	220-240V-50Hz-1Ph	
Heat Exchange		—	Cross Fin Coil	
Fan	Type	—	Centrifugal fan	
	Drive	—	direct	
	Motor Output	kW	0.03×1	
	Air Flow	m <sup>3</sup> /h	1400/1270/1170	
	Ext. Static Pressure	Pa	0	
Sound Pressure Level (H/M/L)		dB(A)	51/49/48	
Air Filter		—	Standard washable synthetic	
Drain Piping		mm	φ32×3	
Dimensions (W×D×H)	Outline	mm	840×840×240	
	Package	mm	963×963×325	
Panel Dimensions (W×D×H)	Outline	mm	950×950×60	
	Package		1028×1043×130	
Weight (Net/Gross)		kg	27/36	
Outdoor Unit			GUHN30TK1AO	GUCN30TK1AO
Power Supply		—	220-240V-50Hz-1Ph	
Heat Exchange		—	Cross Fin Coil	
Fan	Type	—	Centrifugal fan	
	Motor Output	kW	0.127×1	
	Fan Motor Speed	rpm	780/500	
Compressor	Type	—	ROTARY	
	Motor Output	kW	3.05	
Refrigerant	Type	—	R22	
	Control	—	Capillary Tube	
	Charge	kg	3.4	
Dimensions (W×D×H)	Outline	mm	980/427/790	
	Package	mm	1083/488/855	
Weight (Net/Gross)		kg	74/78	73/77
Piping Connections	Liquid	Inch	φ3/8"	
	Gas	Inch	φ5/8"	
	Max. Length	m	30	
	Max. Height Difference	m	15	

Continued :8

Models	Indoor unit		GKH36TK1BI	GKH36TK1BI
	Product Code		ET010N0280	ET010N0280
	Outdoor unit		GUHN36TK1AO	GUCN36TK1AO
	Product Code		CF021W0430	CF021W1420
Nominal Capacity	Cooling	kW	10	10
		Btu/h	34100	34100
	Heating	kW	11.72	–
		Btu/h	40000	–
Power Input	Cooling	kW	4.0	4.0
	Heating	kW	3.75	–
EER/COP		W/W	2.50/3.13	2.50
Indoor Unit			GKH36TK1BI	GKH36TK1BI
Power Supply		–	220-240V-50Hz-1Ph	
Heat Exchange		–	Cross Fin Coil	
Fan	Type	–	centrifugal fan	
	Drive	–	direct	
	Motor Output	kW	0.045×1	
	Air Flow	m <sup>3</sup> /h	1660/1570/1500	
	Ext. Static Pressure	Pa	0	
Sound Pressure Level (H/M/L)		dB(A)	53/51/48	
Air Filter		–	Standard washable synthetic	
Drain Piping		mm	φ32×3	
Dimensions (W×D×H)	Outline	mm	840×840×320	
	Package	mm	963×963×409	
Panel Dimensions (W×D×H)	Outline	mm	950×950×60	
	Package	mm	1028×1043×130	
Weight (Net/Gross)		kg	32/41	
Outdoor Unit			GUHN36TK1AO	GUCN36TK1AO
Power Supply		–	220-240V-50Hz-1Ph	
Heat Exchange		–	Cross Fin Coil	
Fan	Type	–	Axial fan	
	Motor Output	kW	0.093×1	
	Fan Motor Speed	rpm	920/-/780	
Compressor	Type	–	SCROLL	
	Motor Output	kW	3.7	
Refrigerant	Type	–	R22	
	Control	–	Capillary Tube	
	Charge	kg	3.5	
Dimensions (W×D×H)	Outline	mm	1018×412×840	
	Package		1103×453×1000	
Weight (Net/Gross)		kg	92/100	91/99
Piping Connections	Liquid	Inch	φ1/2"	
	Gas	Inch	φ3/4"	
	Max. Length	m	50	
	Max. Height Difference	m	30	

Continued:9

Models	Indoor unit		GKH36TK1BI	GKH36TK1BI
	Product Code		ET010N0280	ET010N0280
	Outdoor unit		GUHN36TM1AO	GUCN36TM1AO
	Product Code		CF021W0441	CF021W1431
Nominal Capacity	Cooling	kW	10	10
		Btu/h	34100	34100
	Heating	kW	11.72	—
		Btu/h	40000	—
Power Input	Cooling	kW	3.9	3.9
	Heating	kW	3.85	—
EER/COP		W/W	2.56/3.04	2.56
Indoor Unit			GKH36TK1BI	GKH36TK1BI
Power Supply		—	220-240V-50Hz-1Ph	
Heat Exchange		—	Cross Fin Coil	
Fan	Type	—	centrifugal fan	
	Drive	—	direct	
	Motor Output	kW	0.16×1	
	Air Flow	m <sup>3</sup> /h	1660/1570/1500	
	Ext. Static Pressure	Pa	0	
Sound Pressure Level (H/M/L)		dB(A)	53/51/48	
Air Filter		—	Standard washable synthetic	
Drain Piping		mm	φ32×3	
Dimensions (W×D×H)	Outline	mm	840×840×240	
	Package	mm	963×963×409	
Panel Dimensions (W×D×H)	Outline	mm	950×950×60	
	Package	mm	1028×1043×130	
Weight (Net/Gross)		kg	32/41	
Outdoor Unit			GUHN36TM1AO	GUCN36TM1AO
Power Supply		—	380-415V-50Hz-3Ph	
Heat Exchange		—	Cross Fin Coil	
Fan	Type	—	Axial fan	
	Motor Output	kW	0.093×1	
	Fan Motor Speed	rpm	920/-/780	
Compressor	Type	—	SCROLL	
	Motor Output	kW	3.65	
Refrigerant	Type	—	R22	
	Control	—	Capillary Tube	
	Charge	kg	3.6	
Dimensions (W×D×H)	Outline	mm	1018×412×840	
	Package	mm	1103×453×1000	
Weight (Net/Gross)		kg	90/98	89/97
Piping Connections	Liquid	Inch	φ1/2"	
	Gas	Inch	φ3/4"	
	Max. Length	m	50	
	Max. Height Difference	m	30	

Continued:10

Models	Indoor unit		GKH42TK1BI
	Product Code		ET010N0290
	Outdoor unit		GUHN42TM1AO
	Product Code		CF021W0451
Nominal Capacity	Cooling	kW	11.5
		Btu/h	39215
	Heating	kW	12.5
		Btu/h	42625
Power Input	Cooling	kW	4.7
	Heating	kW	4.7
EER/COP		W/W	2.45/2.66
Indoor Unit			GKH42TK1BI
Power Supply		-	220-240V-50Hz-1Ph
Heat Exchange		-	Cross Fin Coil
Fan	Type	-	centrifugal fan
	Drive	-	direct
	Motor Output	kW	0.065×1
	Air Flow	m <sup>3</sup> /h	1660/1570/1500
	Ext. Static Pressure	Pa	0
Sound Pressure Level (H/M/L)		dB(A)	53/51/48
Air Filter		-	Standard washable synthetic
Drain Piping		mm	φ32×3
Dimensions (W×D×H)	Outline	mm	840×840×320
	Package	mm	963×963×409
Panel Dimensions (W×D×H)	Outline	mm	950×950×60
	Package	mm	1028×1043×130
Weight (Net/Gross)		kg	32/41
Outdoor Unit			GUHN42TM1AO
Power Supply		-	380-415V-50Hz-3Ph
Heat Exchange		-	Cross Fin Coil
Fan	Type	-	Axial fan
	Motor Output	kW	0.149×1
	Fan Motor Speed	rpm	820
Compressor	Type	-	SCROLL
	Motor Output	kW	4.3
Refrigerant	Type	-	R22
	Control	-	Capillary Tube
	Charge	kg	3.05
Dimensions (W×D×H)	Outline	mm	1107×440×1100
	Package	mm	1158×483×1235
Weight (Net/Gross)		kg	96/105
Piping Connections	Liquid	Inch	φ1/2"
	Gas	Inch	φ3/4"
	Max. Length	m	50
	Max. Height Difference	m	30



Continued:11

Models	Indoor unit		GKH48TK1BI	GKH48TK1BI
	Product Code		ET010N0300	ET010N0300
	Outdoor unit		GUHN48TM1AO	GUCN48TM1AO
	Product Code		CF021W0461	CF021W1451
Nominal Capacity	Cooling	kW	14	14
		Btu/h	48000	48000
	Heating	kW	14.8	—
		Btu/h	50500	—
Power Input	Cooling	kW	5.8	5.8
	Heating	kW	6.1	—
EER/COP		W/W	2.41/2.43	2.41
Indoor Unit			GKH48TK1BI	GKH48TK1BI
Power Supply		—	220-240V-50Hz-1Ph	
Heat Exchange		—	Cross Fin Coil	
Fan	Type	—	centrifugal fan	
	Drive	—	direct	
	Motor Output	kW	0.045×1	
	Air Flow	m <sup>3</sup> /h	1660/1570/1500	
	Ext. Static Pressure	Pa	0	
Sound Pressure Level (H/M/L)		dB(A)	53/51/48	
Air Filter		—	Standard washable synthetic	
Drain Piping		mm	φ32×3	
Dimensions (W×D×H)	Outline	mm	840×840×320	
	Package	mm	963×963×409	
Panel Dimensions (W×D×H)	Outline	mm	950×950×60	
	Package	mm	1028×1043×130	
Weight (Net/Gross)		kg	32/41	
Outdoor Unit			GUHN48TM1AO	GUCN48TM1AO
Power Supply		—	380-415V-50Hz-3Ph	
Heat Exchange		—	Cross Fin Coil	
Fan	Type	—	Axial fan	
	Motor Output	kW	0.149×1	
	Fan Motor Speed	rpm	820	
Compressor	Type	—	SCROLL	
	Motor Output	kW	5.35	
Refrigerant	Type	—	R22	
	Control	—	Capillary Tube	
	Charge	kg	5.0	
Dimensions (W×D×H)	Outline	mm	1107×440×1100	
	Package	mm	1158×483×1235	
Weight (Net/Gross)		kg	108/117	107/116
Piping Connections	Liquid	Inch	φ1/2"	
	Gas	Inch	φ3/4"	
	Max. Length	m	50	
	Max. Height Difference	m	30	

Continued:12

Models	Indoor unit		GKH24TK1B2I	GKH30TK1B2I
	Product Code		ET010N0650	ET010N0610
	Outdoor unit		GUHN24TK1AO	GUHN30TK1AO
	Product Code		CF021W0411	CF021W0421
Nominal Capacity	Cooling	kW	6.8	8.4
		Btu/h	23200	28600
	Heating	kW	7.3	9.4
		Btu/h	24900	32073
Power Input	Cooling	kW	2.5	3.2
	Heating	kW	2.6	3.2
EER/COP		W/W	2.72/2.81	2.62/8.94
Indoor Unit			GKH24TK1B2I	GKH30TK1B2I
Power Supply		-	220-240V-50Hz-1Ph	220-240V-50Hz-1Ph
Heat Exchange		-	Cross Fin Coil	Cross Fin Coil
Fan	Type	-	centrifugal fan	centrifugal fan
	Drive	-	direct	direct
	Motor Output	kW	0.03×1	0.03×1
	Air Flow	m <sup>3</sup> /h	1400/1270/1170	1400/1270/1170
	Ext. Static Pressure	Pa	0	0
Sound Pressure Level (H/M/L)		dB(A)	51/49/48	51/49/48
Air Filter		-	Standard washable synthetic	Standard washable synthetic
Drain Piping		mm	φ32×3	φ32×3
Dimensions (W×D×H)	Outline	mm	840×840×240	840×840×240
	Package	mm	963×963×325	963×963×325
Panel Dimensions (W×D×H)	Outline	mm	952×952×80	952×952×80
	Package	mm	1038×1033×133	1038×1033×133
Weight (Net/Gross)		kg	27/36	27/36
Outdoor Unit			GUHN24TK1AO	GUHN30TK1AO
Power Supply		-	220-240V-50Hz-1Ph	220-240V-50Hz-1Ph
Heat Exchange		-	Cross Fin Coil	Cross Fin Coil
Fan	Type	-	Axial fan	Axial fan
	Motor Output	kW	0.093×1	0.124×1
	Fan Motor Speed	rpm	940/-/510	780/-/500
Compressor	Type	-	SCROLL	SCROLL
	Motor Output	kW	2.39	3.05
Refrigerant	Type	-	R22	R22
	Control	-	Capillary Tube	Capillary Tube
	Charge	kg	2.5	3.4
Dimensions (W×D×H)	Outline	mm	1018×412×695	980×427×790
	Package	mm	1103×453×770	1083×488×855
Weight (Net/Gross)		kg	67/71	74/78
Piping Connections	Liquid	Inch	φ3/8"	φ3/8"
	Gas	Inch	φ5/8"	φ5/8"
	Max. Length	m	30	30
	Max. Height Difference	m	15	15

Continued:13

Models	Indoor unit		GKH36TK1B2I	GKH36TK1B2I
	Product Code		ET010N0620	ET010N0620
	Outdoor unit		GUHN36TK1AO	GUHN36TM1AO
	Product Code		CF021W0430	CF021W0441
Nominal Capacity	Cooling	kW	10	10
		Btu/h	34100	34100
	Heating	kW	11.72	11.72
		Btu/h	40000	40000
Power Input	Cooling	kW	4.0	3.9
	Heating	kW	3.75	3.85
EER/COP		W/W	2.5/3.13	2.56/3.04
Indoor Unit			GKH36TK1B2I	GKH36TK1B2I
Power Supply		—	220-240V-50Hz-1Ph	220-240V-50Hz-1Ph
Heat Exchange		—	Cross Fin Coil	Cross Fin Coil
Fan	Type	—	centrifugal fan	centrifugal fan
	Drive	—	direct	direct
	Motor Output	kW	0.045×1	0.045×1
	Air Flow	m <sup>3</sup> /h	1660/1570/1500	1660/1570/1500
	Ext. Static Pressure	Pa	0	0
Sound Pressure Level (H/M/L)		dB(A)	53/51/48	53/51/48
Air Filter		—	Standard washable synthetic	Standard washable synthetic
Drain Piping		mm	φ32×3	φ32×3
Dimensions (W×D×H)	Outline	mm	840×840×320	840×840×320
	Package	mm	963×963×409	963×963×409
Panel Dimensions (W×D×H)	Outline	mm	952×952×80	952×952×80
	Package	mm	1038×1033×133	1038×1033×133
Weight (Net/Gross)		kg	32/41	32/41
Outdoor Unit			GUHN36TK1AO	GUHN36TM1AO
Power Supply		—	220-240V-50Hz-1Ph	380-415V-50Hz-3Ph
Heat Exchange		—	Cross Fin Coil	Cross Fin Coil
Fan	Type	—	Axial fan	Axial fan
	Motor Output	kW	0.093×1	0.093×1
	Fan Motor Speed	rpm	920/-/780	920/-/780
Compressor	Type	—	SCROLL	SCROLL
	Motor Output	kW	3.7	3.65
Refrigerant	Type	—	R22	R22
	Control	—	Capillary Tube	Capillary Tube
	Charge	kg	3.5	3.6
Dimensions (W×D×H)	Outline	mm	1018×412×840	1018×412×840
	Package	mm	1103×453×895	1103×453×895
Weight (Net/Gross)		kg	92/100	92/100
Piping Connections	Liquid	Inch	φ1/2"	φ1/2"
	Gas	Inch	φ3/4"	φ3/4"
	Max. Length	m	50	50
	Max. Height Difference	m	30	30

Continued:14

Models	Indoor unit		GKH42TK1B2I	GKH48TK1B2I
	Product Code		ET010N0630	ET010N0640
	Outdoor unit		GUHN42TM1AO	GUHN48TM1AO
	Product Code		CF021W0451	CF021W0461
Nominal Capacity	Cooling	kW	11.5	14
		Btu/h	39215	48000
	Heating	kW	12.5	14.8
		Btu/h	42625	50500
Power Input	Cooling	kW	4.7	5.8
	Heating	kW	4.7	6.1
EER/COP		W/W	2.45/2.66	2.41/2.43
Indoor Unit			GKH42TK1B2I	GKH48TK1B2I
Power Supply		—	220-240V-50Hz-1Ph	220-240V-50Hz-1Ph
Heat Exchange		—	Cross Fin Coil	Cross Fin Coil
Fan	Type	—	centrifugal fan	centrifugal fan
	Drive	—	direct	direct
	Motor Output	kW	0.067×1	0.045×1
	Air Flow	m <sup>3</sup> /h	1660/1570/1500	1660/1570/1500
	Ext. Static Pressure	Pa	0	0
Sound Pressure Level (H/M/L)		dB(A)	53/51/48	53/51/48
Air Filter		—	Standard washable synthetic	Standard washable synthetic
Drain Piping		mm	φ32×3	φ32×3
Dimensions (W×D×H)	Outline	mm	840×840×320	840×840×320
	Package	mm	963×963×409	963×963×409
Panel Dimensions (W×D×H)	Outline	mm	952×952×80	952×952×80
	Package	mm	1038×1033×133	1038×1033×133
Weight (Net/Gross)		kg	32/41	32/41
Outdoor Unit			GUHN42TM1AO	GUHN48TM1AO
Power Supply		—	380-415V-50Hz-3Ph	380-415V-50Hz-3Ph
Heat Exchange		—	Cross Fin Coil	Cross Fin Coil
Fan	Type	—	Axial fan	Axial fan
	Motor Output	kW	0.149×1	0.149×1
	Fan Motor Speed	rpm	820	820
Compressor	Type	—	SCROLL	SCROLL
	Motor Output	kW	4.3	5.35
Refrigerant	Type	—	R22	R22
	Control	—	Capillary Tube	Capillary Tube
	Charge	kg	3.05	5.0
Dimensions (W×D×H)	Outline	mm	1107×440×1100	1107×440×1100
	Package	mm	1158×483×1130	1158×483×1130
Weight (Net/Gross)		kg	96/105	108/117
Piping Connections	Liquid	Inch	φ1/2"	φ1/2"
	Gas	Inch	φ3/4"	φ3/4"
	Max. Length	m	50	50
	Max. Height Difference	m	30	30

Note:

- ① . Nominal capacities are based on the follow conditions.

Mode	Indoor	Outdoor
Cooling	DB: 27°C(80.6°F) WB: 19°C(66.2°F)	DB: 35°C(95°F) WB: 24°C(75.2°F)
Heating	DB: 20°C(68°F) WB: --°C(--°F)	DB: 7°C(44.6°F) WB: 6°C(42.8°F)
Piping Length	5m	

- ② . The air volume is measured at the relevant standard external static pressure.

- ③ . Noise is tested in the Semi shield room, so it should be slightly higher in the actual operation due to environmental change.

## 4.2 Electrical Data

### Outdoor unit

Model	Compressor				Fan Motor	Fuse/Breaker Capacity	Min. Power Supply Cord
	Power Supply	Qty.	RLA	LRA	FLA		
	V/Ph/Hz	–	A	A	A		
GUCN24TK1AO	220-240,1,50	1	11.20	66	0.61	25	4.0
GUHN24TK1AO							
GUCN30TK1AO	220-240,1,50	1	14.80	76	0.8	25	4.0
GUHN30TK1AO							
GUCN36TK1AO	220-240,1,50	1	17.00	130	0.8	32	6.0
GUHN36TK1AO							
GUCN36TM1AO	380-415,3,50	1	6.50	48	0.8	16	2.5
GUHN36TM1AO							
GUCN42TM1AO	380-415,3,50	1	7.30	60	0.8	20	4.0
GUHN42TM1AO							
GUCN48TM1AO	380-415,3,50	1	9.40	73	0.8	25	4.0
GUHN48TM1AO							
GUCN60TM1AO	380-415,3,50	1	9.40	73	0.8	25	4.0
GUHN60TM1AO							

### Indoor unit

Model	Power Supply	Fan Motor FLA	Fuse/Breaker Capacity	Min. Power Supply Cord
	V/Ph/Hz	A	A	mm <sup>2</sup>
GFH24TK1BI	220-240,1,50	1.10	6	1.0
GFH30TK1BI	220-240,1,50	1.10	6	1.0
GFH36TK1BI	220-240,1,50	3.26	10	1.5
GFH42TK1BI	220-240,1,50	3.26	10	1.5
GFH48TK1BI	220-240,1,50	3.26	10	1.5
GFH60TK3BI	220-240,1,50	2.30	10	1.5
GKH24TK1BI	220-240,1,50	1.00	6	1.0
GKH30TK1BI	220-240,1,50	1.00	6	1.0
GKH36TK1BI	220-240,1,50	0.65	10	1.5
GKH42TK1BI	220-240,1,50	0.70	10	1.5
GKH48TK1BI	220-240,1,50	0.65	10	1.5
GKH24TK1B2I	220-240,1,50	1.00	6	1.0
GKH30TK1B2I	220-240,1,50	1.00	6	1.0
GKH36TK1B2I	220-240,1,50	0.65	10	1.5
GKH42TK1B2I	220-240,1,50	0.70	10	1.5
GKH48TK1B2I	220-240,1,50	0.65	10	1.5

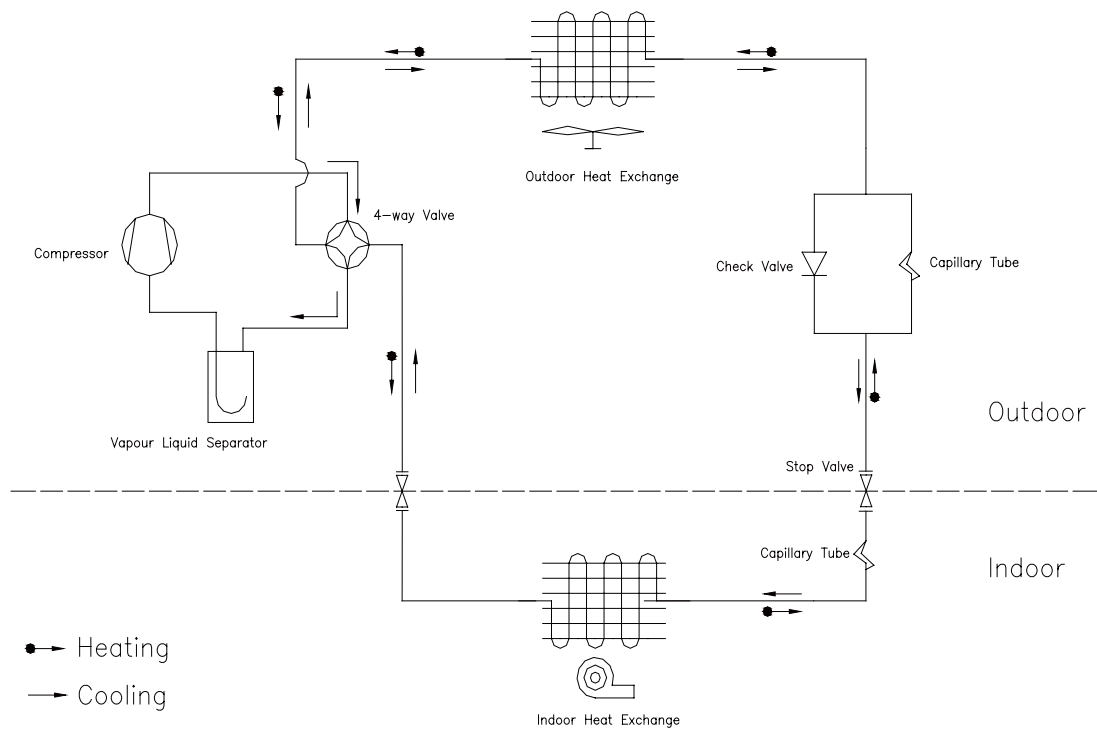
#### Notes:

RLA: Rated load amperes

LRA: Locked rotor amperes

FLA: Full load current

## 5 PIPING DIAGRAM



# CONTROL

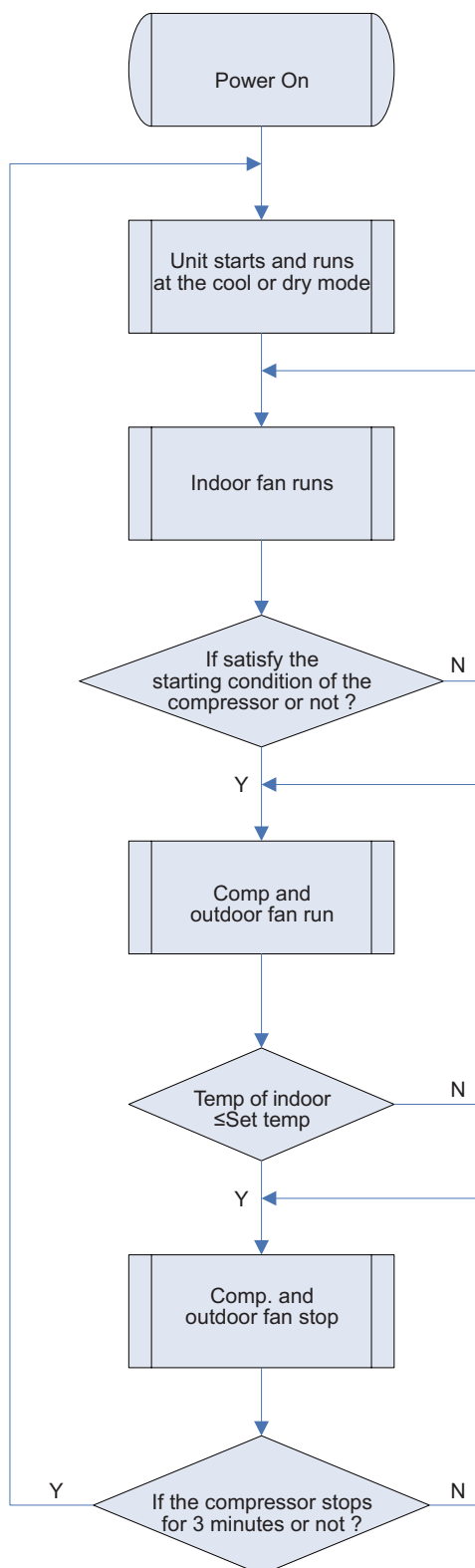


## CONTROL

### 1 OPERATION FLOWCHART

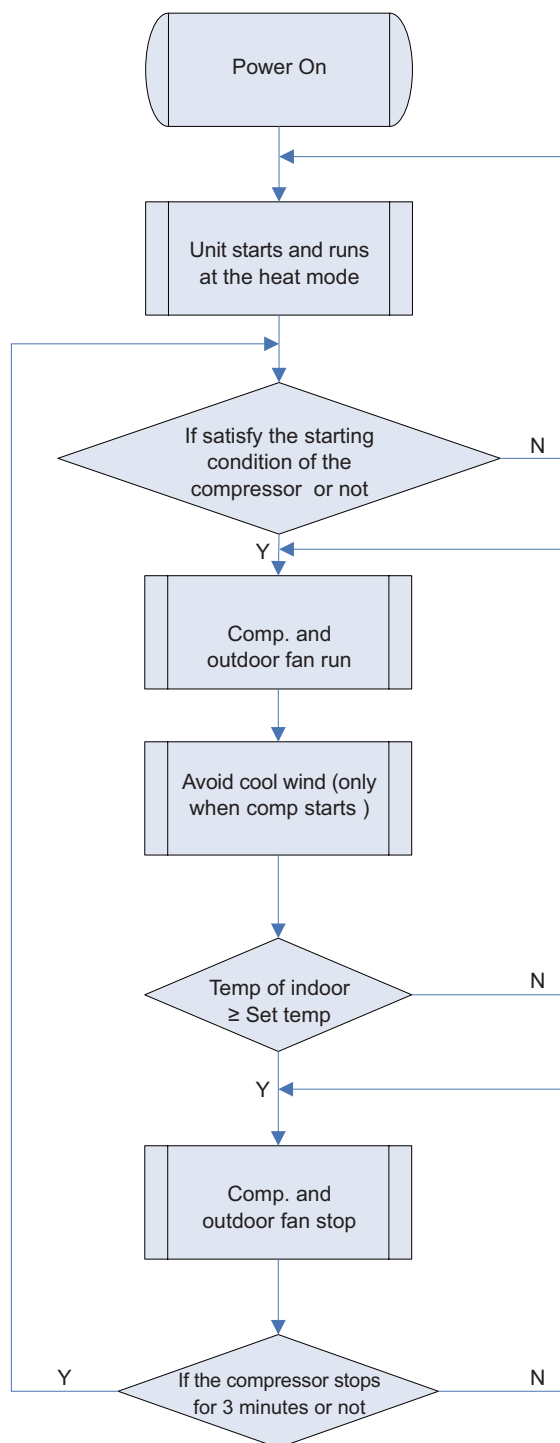
#### 1.1 Cooling/Dry Operation

The operation flowchart for cooling/dry operation is as follows.



## 1.2 Heating Operation

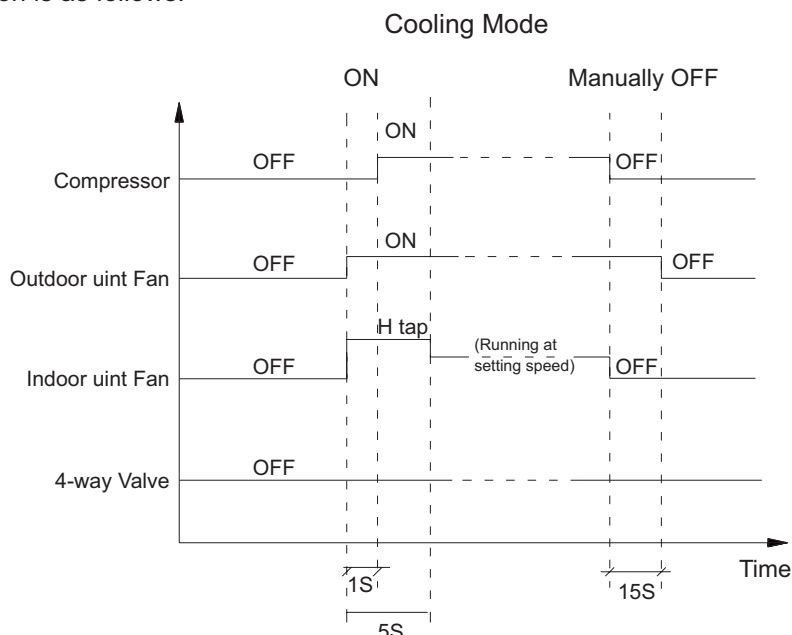
The operation flowchart for heating operation is as follows.



## 2 MAIN LOGIC

### 2.1 Cooling Mode

Cooling mode operation is as follows.

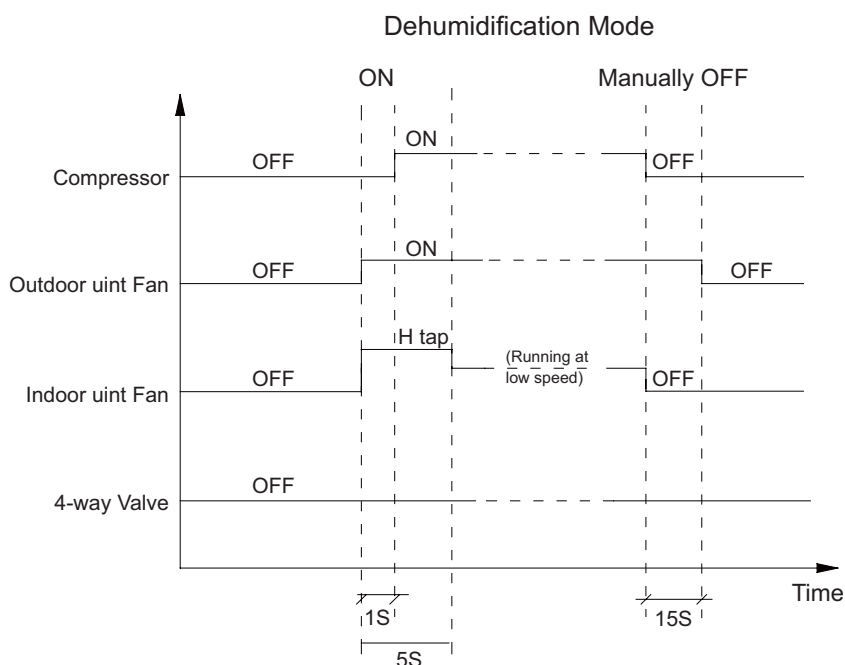


$T_{amb} \geq T_{set} + 1^{\circ}\text{C}$ : Cooling mode will be entered. In that case, the compressor and outdoor unit fan will start and also the indoor unit fan will run at the setting speed.

$T_{amb} \leq T_{set} - 1^{\circ}\text{C}$ : Cooling OFF status will be entered. In that case, the compressor and outdoor unit fan will stop while the indoor unit fan will run at the setting speed.

### 2.2 Dry Mode

Dry mode operation is as follows



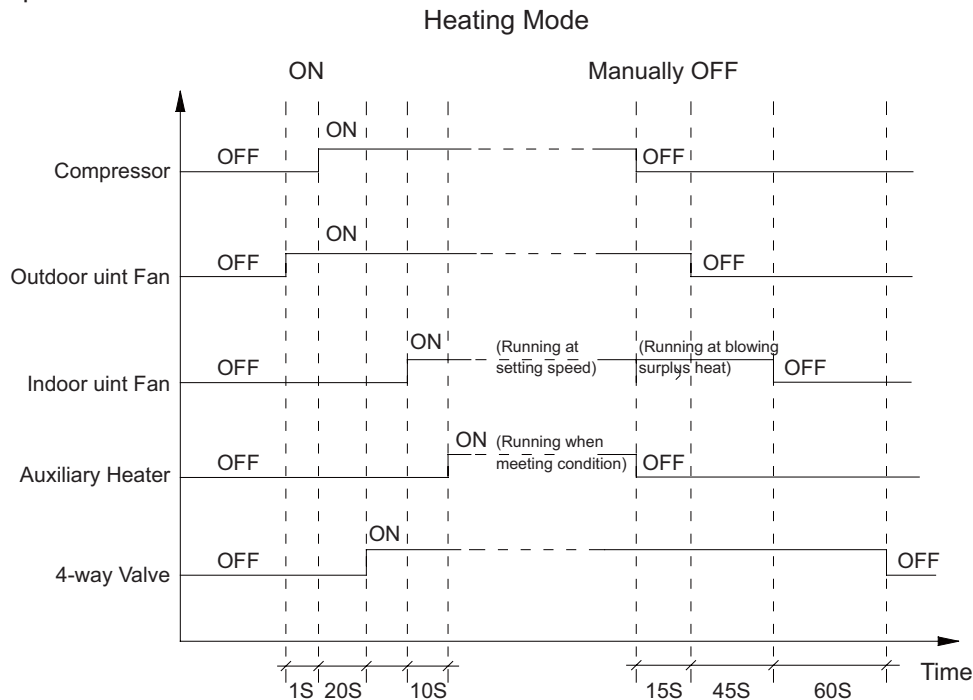
$T_{amb} \geq T_{set} + 2^{\circ}\text{C}$ : Cooling mode will be entered. In that case, the compressor and outdoor unit fan will start and also the indoor unit fan will run at the low speed.

$T_{amb} \leq T_{set} - 2^{\circ}\text{C}$ : Cooling OFF status will be entered. In that case, the compressor and outdoor unit fan stop running.

$T_{set} - 2^{\circ}\text{C} < T_{amb} < T_{set} + 2^{\circ}\text{C}$ : ON-OFF status will alternate circularly. That is, after the compressor is running for 6 minutes consecutively, it will stop for another 4 minutes, and then repeat again and again. In that case, the indoor unit fan runs at a low speed.

## 2.3 Heating Mode

Heating mode operation is as follows.



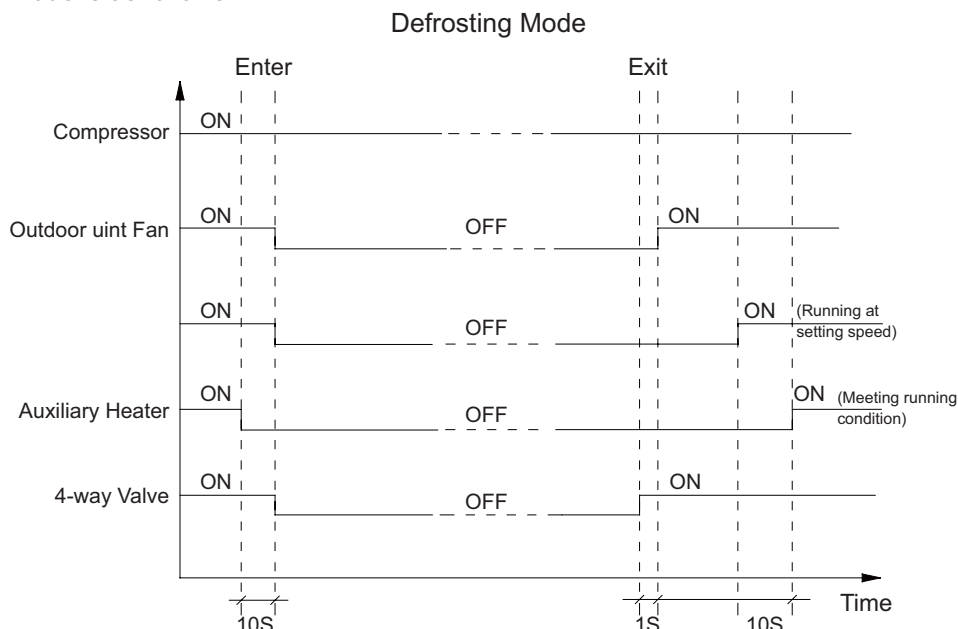
$T_{amb} \leq T_{set} - 1^{\circ}\text{C}$ : Heating mode will be entered. The compressor and outdoor unit fan will run and indoor unit fan will run at setting speed and the mode of cold-blast air prevention.

$T_{amb} \geq T_{set} + 1^{\circ}\text{C}$ : The compressor and outdoor unit fan will stop but the 4-way valve will be still energized. Indoor unit fan will run at the mode of blowing surplus heat.

$T_{set} - 1^{\circ}\text{C} < T_{amb} < T_{set} + 1^{\circ}\text{C}$ : Previous running status will be kept.

## 2.4 Defrosting

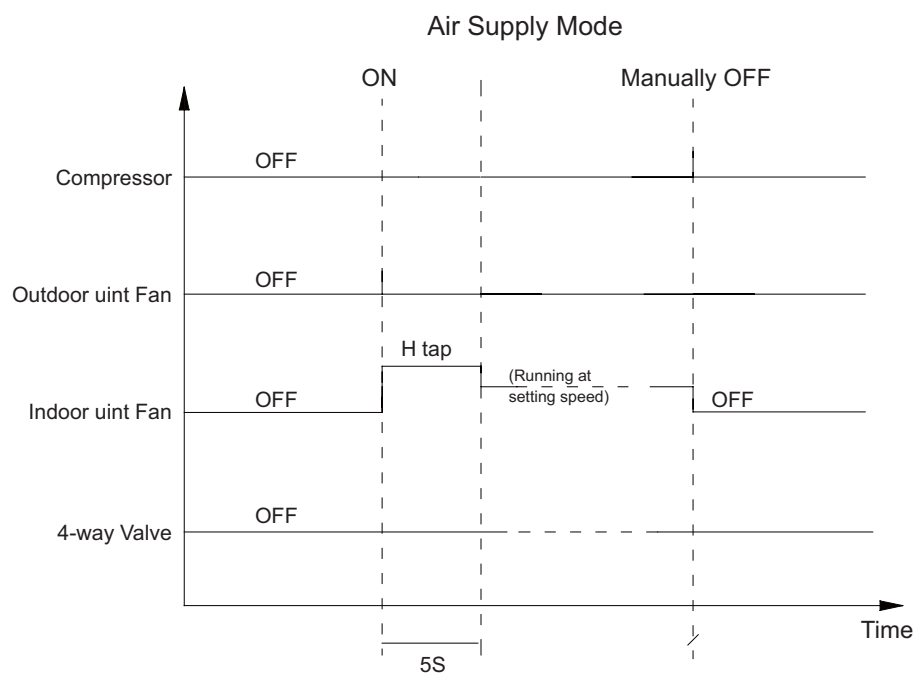
Defrosting mode is as follows.



**Conditions of Defrosting ON:** When accumulated heating time has reached 44min, the compressor has been running for continuous 4min and 50sec, and  $T_{con} \leq -5^{\circ}\text{C}$  has been detected for continuous 1min, defrosting starts. If auxiliary heater is ON, it will be stopped firstly. At 10s later, 4-way valve, indoor and outdoor unit fans will be stopped while the compressor will compulsively run.

**Conditions of Defrosting OFF:** When defrosting has been running for 10min or  $T_{con} \geq 10^{\circ}\text{C}$ , defrosting finishes. Then, 4-way valve and the outdoor unit fan will start and also the compressor will run forcibly. Besides, the indoor unit fan will run at the mode of cold-blast air proof.

## 2.5 Fan Mode



The indoor unit fan will firstly run at high speed for 5 seconds and then run at setting speed.

## 3 CONTROLLER

Notes:

① . This remote control is universal .It could be used for many units. Some buttons which are not available in this unit will not be described below.

② . “\*” Means there is no this function for these units

### 3.1 Remote Controller

#### 3.1.1 Operation View

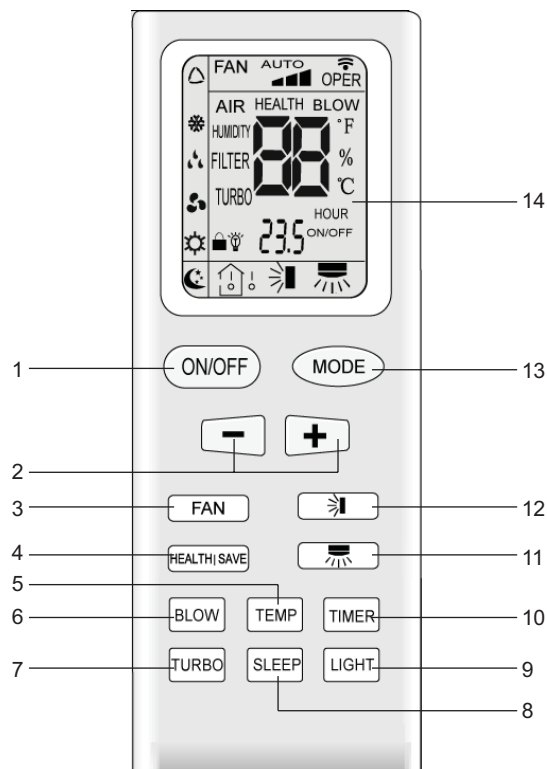


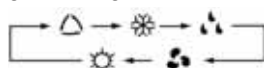


Fig.3.1.1

Table 3.1.1

NO.	Name	Function description
1	ON/OFF button	After powering the unit, when the unit is off state, press the "ON/OFF" button to start the unit. and when the unit is on state, press the button, it will be off.
2	"+" , "-" button	Press the "+" or "-" button to set your desired temperature. The temperature range is from 16°C to 30°C. It is not necessary at AUTO mode. and when you are setting the timing hours, press the "+" or "-" button once, the timing hours will increase or decrease 0.5 hour.
3	FAN button	Press the "FAN" button to set fan speed. The AUTO FAN, LOW, MID, HIGH could be selected.
4	HEALTH  SAVE button*	There is no this function for this unit. If press this key, the main unit will click, but it also runs under original status.
5	"Temp" button*	There is no this function for this unit. If press this key, the main unit will click, but it also runs under original status.
6	BLOW button	Set Blow on or off (the characters of Blow will appear of disappear) by pressing this key under cooling or dehumidify mode. Once energized, the unit will be defaulted to be Blow off. This function can not be set under auto, fan or heat mode, and the characters of Blow won't appear.
7	TURBO button	Set turbo on or off (the characters of turbo will appear of disappear) by pressing this key under cooling or heating mode. Once energized, the unit will be defaulted to be turbo off. This function can not be set under auto, dehumidify or fan mode, and characters of turbo won't appear.
8	SLEEP button	Press this button to set the sleep mode. Once the sleep mode is set, the temperature will increase 1°C after 1 hour, and still increase another 1°C after 2 hours in the COOL mode. While in HEAT mode, the temperature will decrease 1°C after 1 hour, and still decrease another 1°C after 2 hours, then this temperature will hold and last during the continuous operation.
9	Light button*	There is no this function for this unit. If press this key, the main unit will click, but it also runs under original status.
10	TIMER button	Press the button to set the timing function. When the timing function is on, press this button to cancel the function. When the timing function is off, press this button once, words Hour on(off) will appear and flicker. In this case, press +/- button to adjust time (press +/- button continuously to change timing value quickly), the setting time range is from 0.5 to 24 hr; press this key once again to fix the time, then remote controller will send out the signal immediately and hour on/off will stop flickering. If the time of that no press timer button under flicking status is above 5s, the timer setting will quit. If the timer has been set, press this button once again to quit it.
11	 button*	There is no this function for this unit. If press this key, the main unit will click, but it also runs under original status.
12	 button	Press this key to activate or deactivate the swing.
13	Mode button	Press this button, the unit will be run in the mode which you want. Press this button once, the mode will be changed in a regular as AUTO –COOL –DRY –FAN – HEAT. 
14	LCD Screen	Display the status of remote information

### 3.1.2 Display View

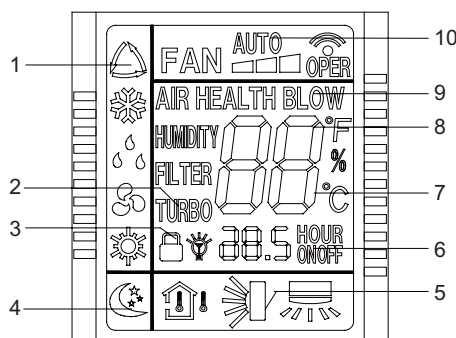


Fig.3.1.2

Table 3.1.2

No.	Display	Function description
1	Run Mode	<ul style="list-style-type: none"> <li> : Auto running;</li> <li> : Cool running;</li> <li> : Dry Running;</li> <li> : Fan Running;</li> <li> : Heat running (Heat and Cool unit only)</li> </ul>
2	Turbo function	Turbo function is on.
3	Lock mode	The remote is locked.
4	Sleep mode	Sleep mode is on.
5	Swing mode	Swing mode is on.
6	Timer set function	Set the timer on and timer off.
7	Symbol of Celsius temperature	Display the Celsius temperature.
8	Symbol of Celsius temperature	Display the Celsius temperature.
9	Blow function	Blow function is on.
10	Fan speed	<ul style="list-style-type: none"> <li><b>FAN</b>  :Auto fan speed;</li> <li><b>FAN</b>  : Low fan speed;</li> <li><b>FAN</b>  :Middle fan speed;</li> <li><b>FAN</b>  :High fan speed</li> </ul>

#### About AUTO RUN:

When AUTO RUN mode is selected, the setting temperature will not be displayed on the LCD .The unit will be accordance with the room temp, automatically to select the suitable running mode and to make ambient comfortable.

#### About TURBO function

If start this function, the unit will run at super-high speed to cool or heat quickly so that the ambient temp approaches the preset temp as soon as possible.

#### About LOCK:

Press “+” and “-” simultaneously to lock or unlock the keyboard. If the remote control is locked, the icon will be displayed on the LCD, in which case, press any button, the mark will flicker for three times. If the keyboard is unlocked, the mark will disappear.

#### About switch between Fahrenheit and Centigrade

Under status of unit off, press MODE and – buttons simultaneously to switch °C and °F.

## 3.2 Wired Controller



Fig.3.2.1 Displaying Part

### 3.2.1 Operation View



Fig.3.2.2 Silk screen of buttons

Table 3.2.1

No.	Description	Function of Button
1	Enter/cancel	① . Function selection and canceling; ② . Press it for 5s to enquiry the outdoor ambient temperature.
2	▲	① . Running temperature setting of indoor unit, range :16~30°C ② . Timer setting, range:0.5-24hr ③ . Switchover between quiet/auto quiet
6	▼	
3	Fan	
4	Mode	Setting of cooling/heating/fan/dry mode of indoor unit
5	Function	Switch over among these functions of air/sleep/turbo/save/e-heater/blow /quiet
7	Timer	Timer setting
8	On/off	Turn on/off indoor unit
4 Mode and 2 ▲	Memory function	Press Mode and ▲ for 5s under off state of the unit to enter/cancel key memory function (If memory is set, indoor unit will resume original setting state after power failure and then power recovery. If not, indoor unit is defaulted to be off after power recovery. Memory function is defaulted to be set before outgoing.)
2 ▲ and 6 ▼	Lock	Upon startup of the unit without malfunction or under off state of the unit, press ▲ ▼ key at the same time for 5s in to lock state. In this case, any other buttons won't respond the press. Repress ▲ ▼ key for 5s to quit lock state.
4 Mode and 5 Function	Enquiry and setting of address of wired controller	Under the off-state of the unit, press Mode/Function button for 5 seconds to set the address.
5 Function And 7Timer	Setting Ambient Temperature Sensor and three Grades of Speed for Indoor Fan	Under off state of the unit, press Function and Timer buttons continuously for 5s to go to the debugging menu. Press Mode button to adjust the setting items and ▲ or ▼ button to set the actual value.
5 Function and 6 ▼	Enquiry of Historical Errors	Continuously press Function and ▼ buttons for 5s to go to the enquiry state. In this state, press Enter/Cancel button to quit, or it will automatically quit after there is not any operation of button in 30min



### 3.2.2 Display View

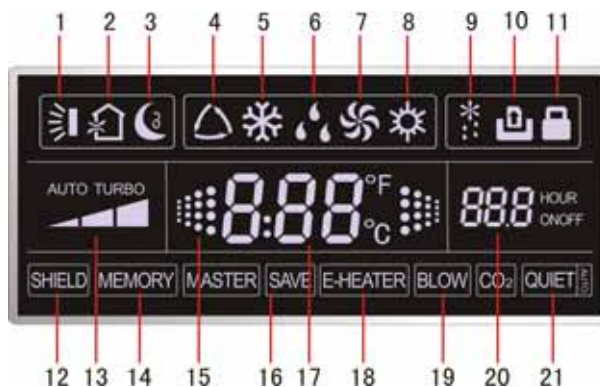


Fig.3.2.3 LCD display

Table 3.2.2

No.	Description	Instruction to Displaying Contents
1	Swing	Swing function
2	Air *	Air exchange function
3	Sleep	Sleeping states
4	Running mode	Each kind of running mode of indoor unit (auto mode)
5	Cooling	Cooling mode
6	Dry	Dry mode
7	Fan	Fan mode
8	Heating	Heating mode
9	Defrost	Defrosting state
10	Gate-control card*	Gate control
11	Lock	Lock state
12	Shield	Shielding state (buttons, temperature, on/off, mode or save is shielded by long-distance monitoring)
13	Turbo	Turbo function state
14	Memory	Memory state (Indoor unit resumes original setting state after power failure and then power recovery)
15	Twinkle	Flicking when unit is on without operation of buttons
16	Save	Energy-saving state
17	Temperature	Ambient/setting temperature value
18	E-Heater*	Mark that E-heater is allowed to turned on
19	Blow	Blow mark
20	Timer	Timer-displayed location
21	Quiet	Quiet state(two types: quiet and auto quiet)

Notes: The functions with \* are reserved for other models and are not applicable for the models listed in this manual.

### 3.2.3 Dimension

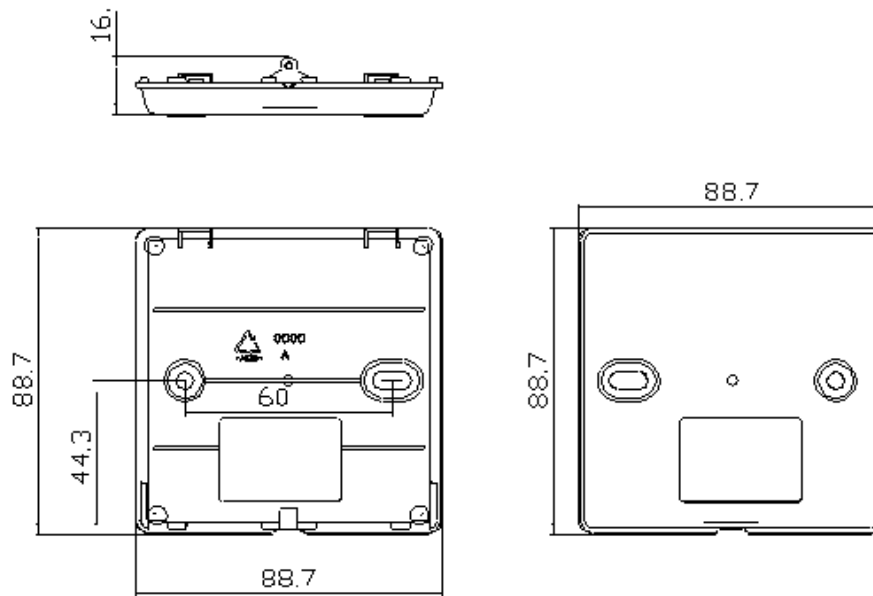


Fig.3.2.4

### 3.2.4 Installation

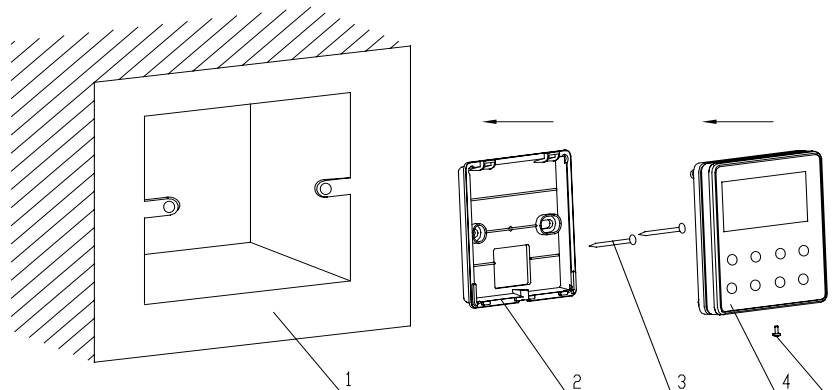


Fig.3.2.5 Sketch for Installation of Wired Controller

Table 3.2.3

No.	1	2	3	4	5
Description	Socket's base box installed in the wall	Soleplate of controller	Screw M4×25	Front panel of controller	Screw ST2.9×6

Fig.3.2.5:Sketch for Installation of Wired Controller. Pay attention to the following items during installation of wired controller:

Cut off power supply of heavy-current wire embedded in mounting hole in the wall before installation. It is prohibited to perform the whole procedure with electricity.

Pull out 4-core twisted pair line in mounting hole and then make it through the rectangle hole at the back of controller's soleplate.

Joint the controller's soleplate on wall face and then fix it in mounting hole with screws M4×25.

Insert the 4-core twisted pair line through rectangle hole into controller's slot and buckle the front panel and soleplate of controller together.

At last, fix the controller's front panel and soleplate with screws ST2.9×6.

**⚠ Caution:** During connection of wirings, pay special attention to the following items to avoid interference of electromagnetism to unit and even failure of it.

To ensure normal communication of the unit, signal line and wiring (communication) of wired controller should be separate from power cord and indoor/outdoor connection lines. The distance between them should

be kept 20cm in min.

If the unit is installed at the place where there is interference of electromagnetism, signal line and wiring (communication) of wired controller must be shielded by twisted pair lines.

#### Position and Method of Installing Wired Remote Controller

One end of the control wire of the wired remote controller is connected to main board in the electric box of indoor unit, it should be tightened by wire clamps, while the other end should be connected to the wired controller. The special control wire be used between the indoor unit and wired remote controller, of which the length is 8 meters.

The material to be adopted for the control wire should be metallic substance. The wired controller could not be disassembled and the control wire to be used for the wired controller should not be changed by users optionally. The installation and maintenance should be carried out by the installer.

Firstly select an installation position. According to the size of the control wire for the wired remote controller, leave a recess or a embedded wire hole to bury the communication line.

If the control wire between the wired remote controller and the indoor unit is surface-mounted, use 1# metallic pipe and make matching recess in the wall (refer to Fig. 3.2.6); If concealed installation is adopted, 1# metallic pipe can be used (Refer to Fig. 3.2.7).

No matter if surface mounting or concealed mounting is selected, it is required to drill 2 holes (in the same level) between which the distance shall be the same as the distance (60mm) of installation holes in the bottom plate of the wired controller. Then insert a wood plug into each hole, fix the bottom plate of the wire controller to the way through these two holes, plug the control wire onto the control panel, and lastly install the panel of the wire controller.( Refer to Figure 3.2.5)

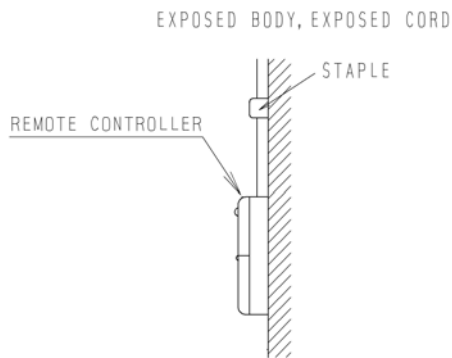


Fig.3.2.6

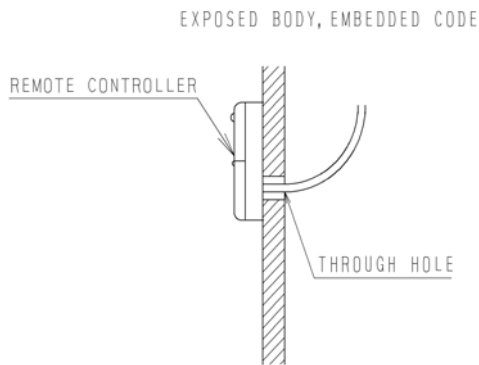


Fig.3.2.7

**⚠ Caution:** During the installation of the bottom plate of the wired controller, pay attention to the direction of the bottom plate. The plate's side with two notches must be at the lower position, otherwise the panel of the wired controller cannot be correctly installed.

**⚠ Caution:**

① . The communication distance between the main board and the wired controller can be as far as 20m (The standard distance is 8m).

② . The wired controller shall not be installed in a place where there is water drop or large amount of water vapor.

# INSTALLATION

## INSTALLATION

### 1 INDOOR UNIT INSTALLATION

#### 1.1 Installation of Duct Type

##### 1.1.1 Before Installation

- ◆ After receiving the unit, check if there is any damage during transportation. If there is damage on the surface or inside, inform the transportation company or equipment supplier in written form immediately.
- ◆ After receiving the unit, check the unit and its accessories according to the packing list. Confirm that the model is the same and the unit is intact. At the same time, check the specification and quantity of the accessories.
- ◆ Select the correct route and method of transportation to avoid damage of the unit and any accident incurred. To avoid damage to the unit and to be on the side of security consideration, it is advised to move the unit with its package. Even if that is forbidden in special situation, don't remove the carton to avoid looseness and drop.
- ◆ Check if the installation base is solid. When the unit is installed in the metal part of the building, make sure it is insulated electrically and conforms with related standards.
- ◆ Make sure that the installation site is far away from where the flammable or explosive substances are stored to avoid explosion or fire may occur by leakage of such substances.

##### 1.1.2 Installation Site

- ◆ Ensure the top hanging piece has strong strength to withstand the weight of the unit.
- ◆ The drainage pipe has convenient flow of water.
- ◆ There is no obstacle blocking the air intake and exhaust outlet, so as to ensure enough air circulation.
- ◆ The installation spaces required by the drawing must be ensured, so as to provide enough space for the service and maintenance.
- ◆ The installation site must be far away from heat source, leakage of inflammable gas or smoke.
- ◆ The indoor unit is mounted on the ceiling (indoor unit is hidden inside the ceiling).
- ◆ The indoor and outdoor units, the power cable and the connecting electrical lines must be kept at least 1 meter away from any TV set or radio. This is to avoid image interference or noise caused by the TV set or radio. (Even if the distance is 1 meter, noise can also exist if there is strong electric wave.)

##### 1.1.3 Caution for Installation

- ◆ The unit is installed inside room and installed as ceiling suspension type. Make sure that the hanger on the ceiling can withstand the weight of the indoor unit.
- ◆ Rubber vibration pad ( thickness  $\geq 20\text{mm}$ ) and rubber junction shall be applied to avoid noise and vibration.
- ◆ Insert a M10 expansion bolt into the hole. Drive a nail into the bolt. Refer to the profile dimensions drawing of the indoor unit for the distance between the holes. Refer to Figure 1 for the installation of the expansion bolt, as shown in Figure 1-1-1.

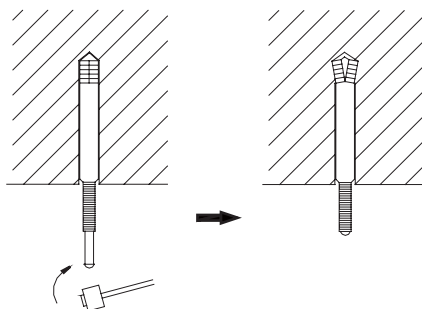


Figure 1-1-1

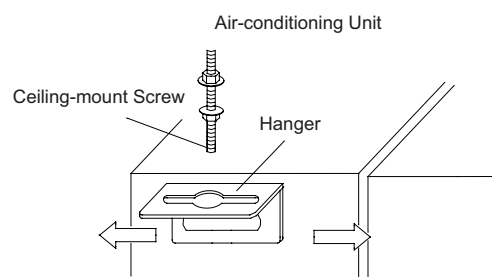


Figure 1-1-2

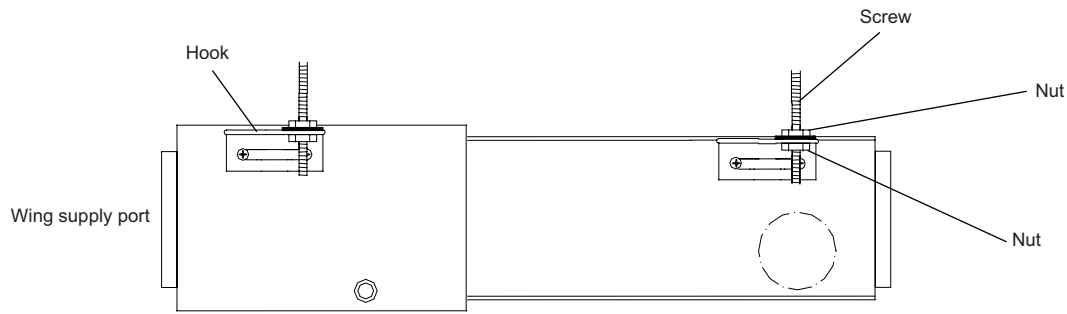


Figure 1-1-3

- ◆ Install the hanger onto the indoor unit as shown in Fig.1-1-2.
- ◆ Install the indoor unit at the ceiling as shown in Fig 1-1-5.

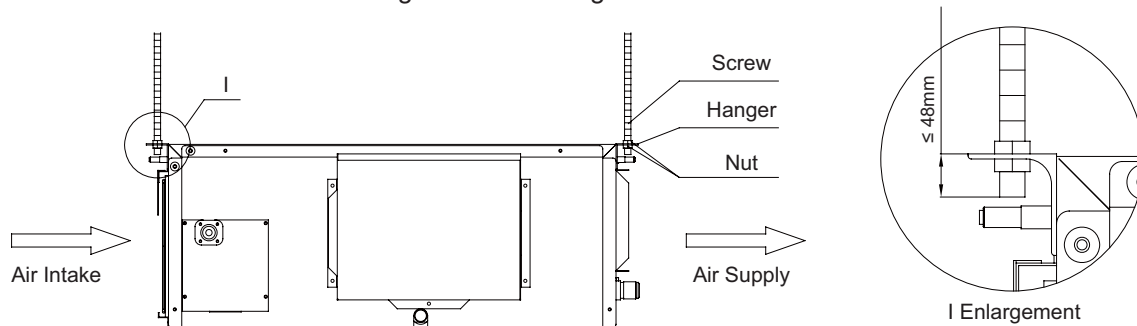


Figure 1-1-5

◆ Precautions for unfavorable installation:

The preparation of all pipes (connecting pipes and drainage pipes) and cables (connecting lines of wired controller, indoor unit and outdoor unit) must be ready before the installation, make the installation go favorably.

Drill an opening on the ceiling. Maybe it is required to support the ceiling to ensure the evenness of it and avoid the vibration of it. Consult with the user or a construction company for details.

In case the strength of ceiling is not enough, use angle iron sections to set up a beam support. Place the unit at the beam and fix it.

◆ Horizontal Survey of the Indoor Unit

After installation of the indoor unit is finished, horizontal survey of the complete unit must be executed to confirm the horizontal placement of the unit, which is shown as below:

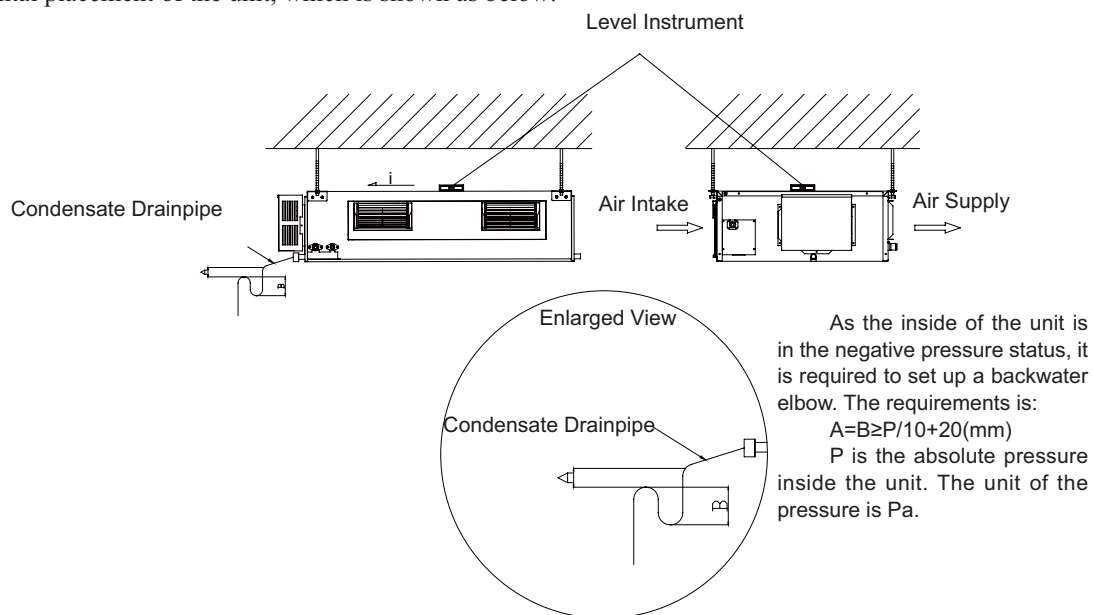


Figure 1-1-6

#### 1.1.4 Dimension Data

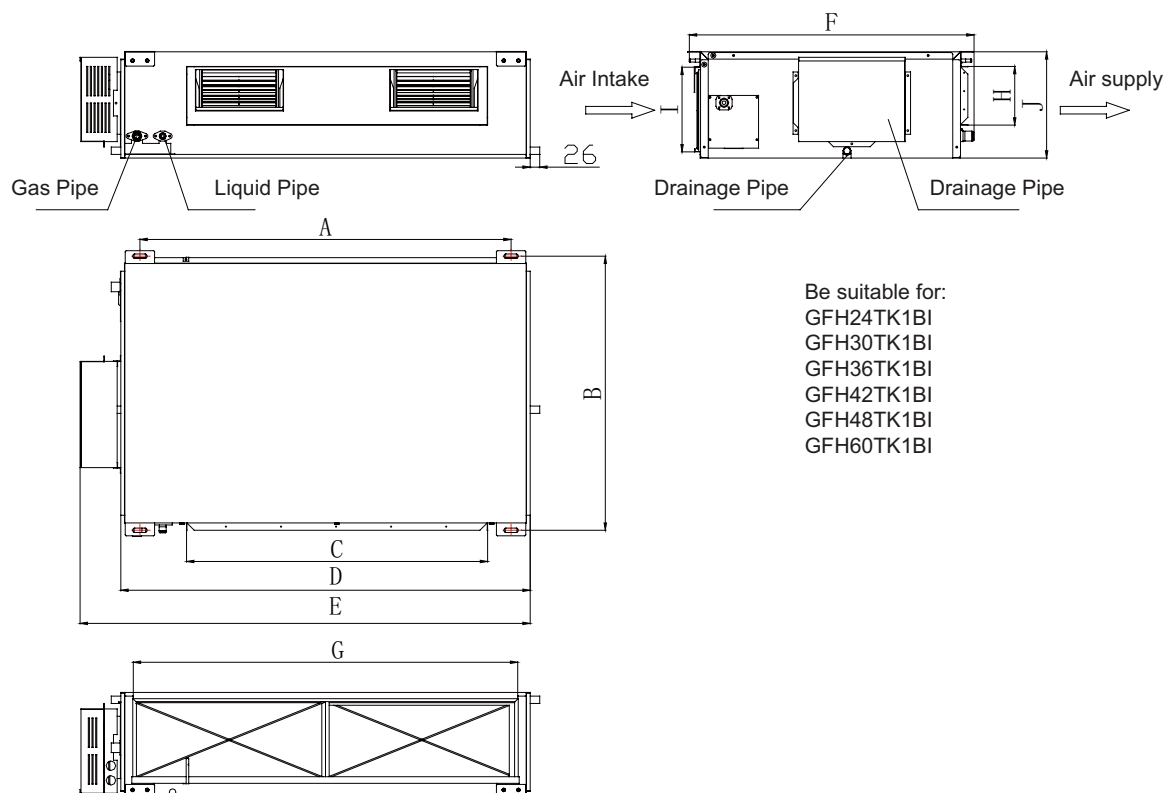


Fig. 1-1-7

Unit:mm

Item Model	A	B	C	D	E	F	G	H	I	J	Connecting Pipe		Drainage pipe (Diameter×wall thickness)
											Liquid	Gas	
GFH24TK1BI	1101	515	820	1159	1270	530	1002	160	235	268	3/8"	5/8"	φ20×1.2
GFH30TK1BI													
GFH36TK1BI													
GFH42TK1BI	1011	748	820	1115	1226	775	979	160	231	290	1/2"	3/4"	φ20×1.2
GFH48TK1BI													
GFH60TK1BI	1015	788	820	1115	1226	788	979	160	261	330	1/2"	3/4"	φ30×1.5

#### Accessories Sheet

Name	Qty	Description
Operation and Installation Instruction	1	—
Heat Insulator of Gas Pipe Joint	1	for gas joint of the indoor unit
Heat Insulator of Liquid Pipe Joint	1	for liquid joint of the indoor unit
Heat Insulator of drain Pipe	2	for wrapping condensate pipe and rubber plug
Nut with Washer M8	8	for fixing hook hitch
Nut with Washer M10	4	4 sets; for installation of the indoor unit
Nut and Spring Pad	4	
Hanger	4	for installation of the indoor unit
Bundle of Threads	4 or 8pcs	4pcs for 18kBtu/h unit and 8pcs for others
Wired Controller	1	—
Remote Controller	1	—
Battery	2	—
Accordion Pipe	0.2pcs or 4pcs	0 for 18kBtu/h unit, 2pcs for 22.5-27kBtu/h unit and 4pcs for 36-45kBtu/h unit
Power Cord	1-2pcs	2 pcs for 36-45kBtu/h unit and 1 pcs for others
Connecting Wire	2-3pcs	3pcs for 36-45kBtu/h unit and 2pcs for others

### 1.1.5 Installation Clearance Data

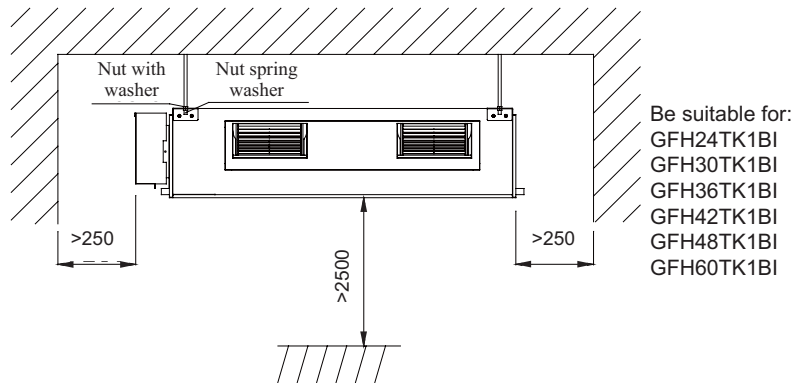


Fig. 1-1-8

### 1.1.6 Drain Piping Work

#### (1). Installation of Drainage Pipeline

A drainage outlet is located at both the left and right sides of the indoor unit. After selecting one drainage outlet, the other outlet shall be blocked by rubber plug. Bundle the blocked outlet with string to avoid leakage, and also use thermal insulation materials to wrap the blocked outlet.

When shipped out from factory, both the drainage outlets are blocked by rubber plugs.

When connecting the drainage pipeline with the unit, do not apply excessive force to the pipeline at the side of the unit. The fixing position of the pipeline shall be near the unit.

Purchase general-purpose hard PVC pipes locally to be used as the drainage pipeline. When carrying out connection, place the end of the PVC pipeline into the drainage hole. Use flexible drainage tube and tighten it with thread loop. Never use adhesive to connect the drainage hole and the flexible drainage tube. (As shown in Figure 1-1-9)

When the laid drainage pipeline is used for multiple units, the common pipe shall be about 100mm lower than the drainage outlet of each set of unit. A pipe with thicker wall shall be used for such purpose.

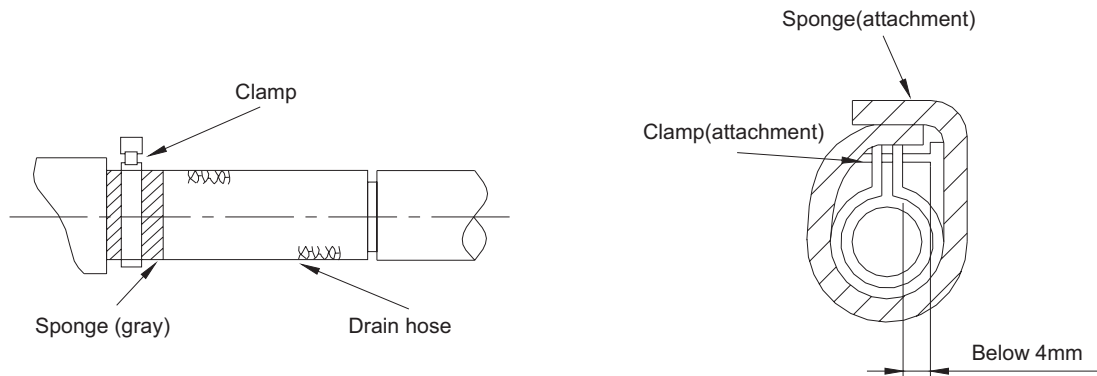


Figure 1-1-9

#### (2). Testing of Drainage System

After the electrical installation is completed, conduct the testing of the drainage system.

During the test, check if the water correctly flows through the pipelines. Carefully check the joints to ensure that there is no leakage. If the unit is to be installed in a new house, carry out testing before decorating the ceiling.

#### (3). Matters of Attention

No leakage is allowed on the joint of the drainage pipeline.

The drainage pipeline shall be installed with an inclination angel of 5~10°, so as to facilitate the drainage of condensate. The joints of the drainage pipeline must be covered by thermal insulation materials to avoid generation of exterior condensate. (As shown in Figure 1-1-10)



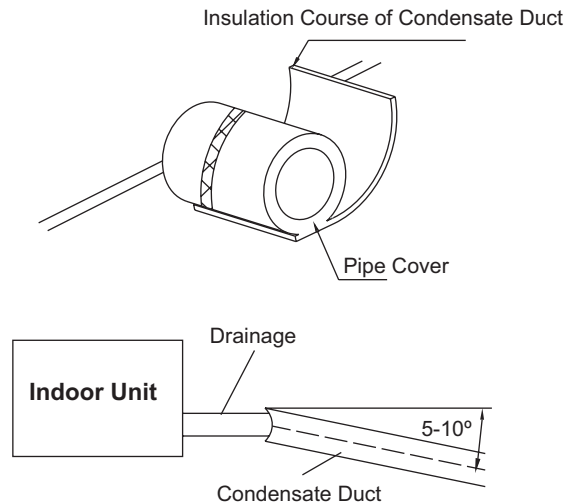


Fig. 1-1-10

### 1.1.7 Installation of Air Duct and Ceiling Opening

**Caution:**

① . The air supply pipe, the air intake pipe and the fresh air pipe must be covered with a layer of thermal insulation, so as to avoid thermal leakage and condensation. Firstly apply liquid nail on the ducts, then attach the thermal insulation cotton with a layer of tinfoil. Use the liquid nail cover to fix it. Lastly use tinfoil adhesive tape to carefully seal the joints; other equivalent thermal insulation materials can also be used.

② . The air supply ducts and the air intake pipes shall be fixed to the prefabricated boards of the ceiling by using iron supports. The joints of the ducts must be sealed by glue so as to avoid leakage.

③ . The design and installation of air pipes must be in conformity with the relevant state engineering criteria.

④ . The edge of the air intake pipes must be at least 150mm away from the wall. The air intake must be equipped with filter.

⑤ . Silencing and shock absorption shall be considered in the design and installation of the air pipes. Additionally, the noise source must be far away from where people stay. The air intake grille must not be located above the place where users stay (offices and rest places, etc.).

**(1). Installation of the Air Supply Duct**

Installation of Rectangular Air Duct as shown in Fig. 1-1-11

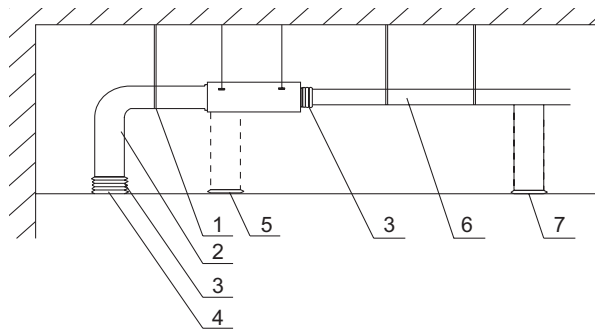


Fig. 1-1-11

S/N	Name	S/N	Name
1	Hanger	5	Air Inlet
2	Air Intake Duct	6	Main Air Supply Duct
3	Canvas Air Duct	7	Air Outlet
4	Air Inlet		

Installation of Round Air Duct as shown in Fig. 1-1-12

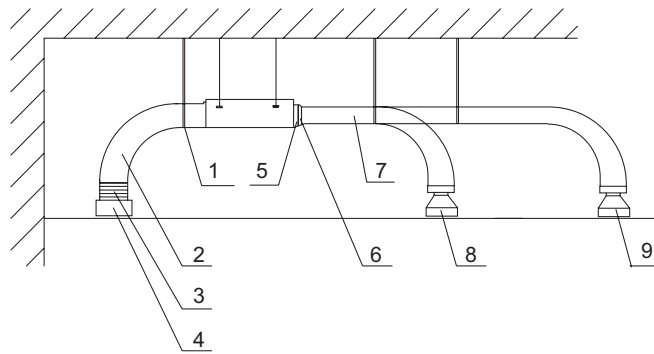


Fig. 1-1-12

S/N	Name	S/N	Name
1	Hanger	6	Transition Air Duct
2	Air Intake Duct	7	Air Supply Duct
3	Canvas Air Duct	8	Diffuser
4	Air Intake Shutter	9	Diffuser Joint
5	Air Outlet		

Note: The above just shows the installation of back air inlet but bottom air inlet can be applied according to the actual situation. Its installation is similar to that of back air inlet. At least one air outlet shall keep open among all air outlets. Round air duct can also be adopted which supply air to room by round heat retaining hose. Both air supply duct and air intake duct need to be thermal insulated.

(2). Installation of Fresh Air Duct (only for the models with 5000W cooling capacity)

When connecting fresh air duct, remove baffle plate of fresh air as Fig. 1-1-13. If fresh air is not applied, seal the gap of baffle plate of fresh air with sponge.

Install round flange to connect fresh air duct as Fig. 1-1-14

Both air duct and round flange duct need to be well sealed and thermal insulated.

Fresh air shall be the air which has been filtered.

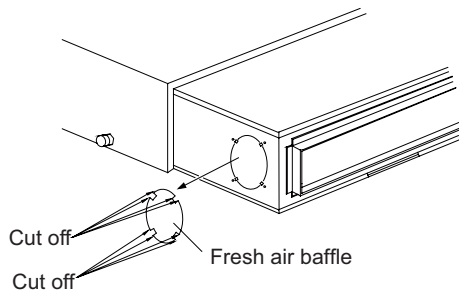


Fig. 1-1-13

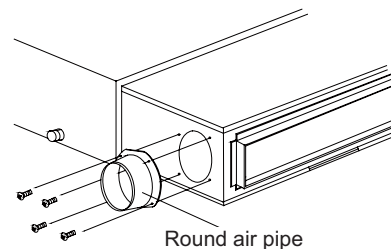


Fig. 1-1-14

(3). Installation of Air Intake Duct (only for the models with 18KBtu/h cooling capacity)

Rectangular flange has been installed on the back of the unit and air intake cover plate has been installed in the bottom when leaving the factory, which is shown as Fig. 1-1-14.

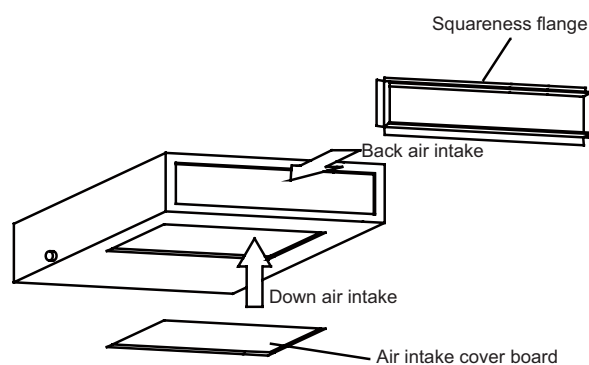
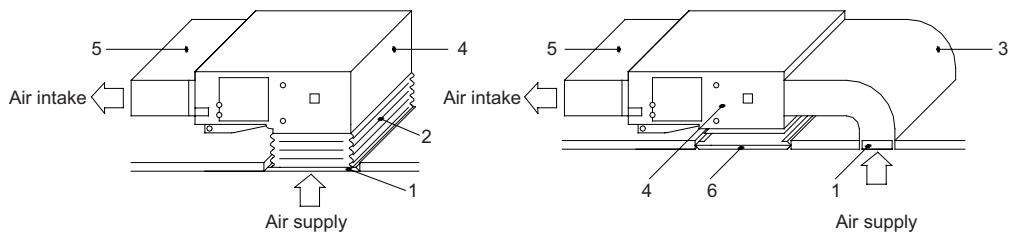


Fig. 1-1-14

If bottom air inlet shall be adopted, change the positions of rectangular flange and air intake cover plate.

Connect air intake duct with air inlet of the indoor unit by clinch bolts. The other end will connect air intake window. For freely adjusting height, canvas air duct can be made which is enhanced by 8# iron wire and shows as pucker shape. When selecting installation method, take the conditions of the building and maintenance of the unit into consideration.



S/N	Name	S/N	Name
1	Air Intake Window( with filter)	4	the Indoor Unit
2	Canvas Air Duct	5	Air Supply Duct
3	Air Intake Duct	6	Testing Grill

Fig. 1-1-15

(4). Installation of Round Air Outlet

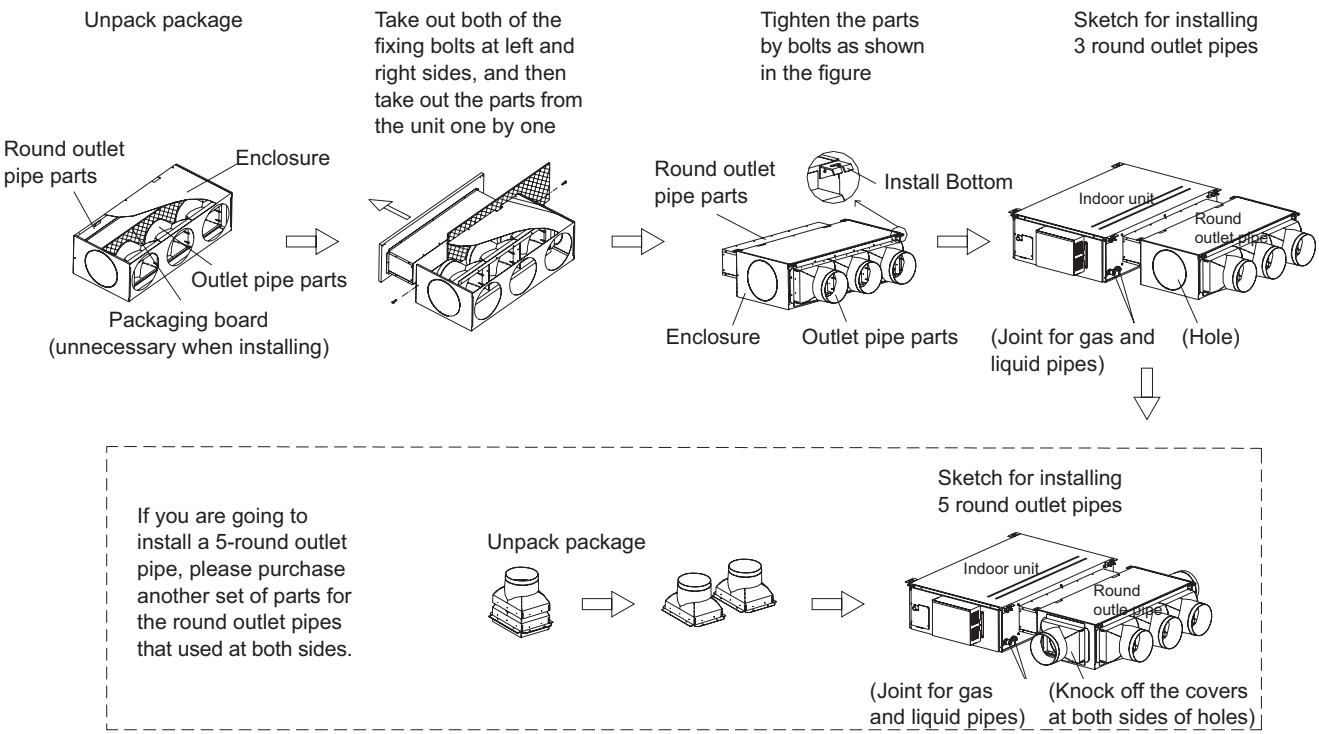


Fig. 1-1-16

## 1.2 Installation of Cassette Type

### 1.2.1 Before Installation

- ◆ After receiving the machine, please check for any transport damage. If finding any surface or internal damage, please immediately report to the transport company or equipment company in writing.
- ◆ After receiving the machine, please check the unit and accessories in reference to the packing list. Ensure that the model is correct and the machine is in good condition. Please also check if the specification and quantity of accessory parts are correct.
- ◆ Determine the correct handling route and methods, thus to avoid damaging the unit or causing possible hazard. For the sake of protection and safety, it is suggested to move the unit with the packaging box. Even though it is not permitted to do like this under special occasions, do not remove the packaging box, thus to avoid loosening or falling during handling.
- ◆ Confirm if the installing foundation is solid. When this unit is to be installed on the metal section of the building, make sure that the electrical insulation must comply with applicable standards.
- ◆ Ensure that the place of installation is far from the area where the inflammable or explosive substances are stored, thus to avoid possible explosion or fire due to leakage.

### 1.2.2 Installation Site

- ◆ Obstruct should put away from the intake or outlet vent of the indoor unit so that the airflow can be blown though all the room.
- ◆ Make sure that the installation had accord with the requirement of the schematic diagram of installation spaces.
- (5). Select the place where can stand 4 times of the weight of the indoor unit and would not increase the operating noise and oscillate.
- ◆ The horizontally of the installation place should be guaranteed.
- ◆ Select the place where is easy to drain out the condensate water, and connect with outdoor unit.
- ◆ Make sure that there are enough space for care and maintenance. Make sure that the weight between the indoor unit and ground is above 2300mm.
- ◆ When installing the steeve bolt, check if the install place can stand the weight 4 times of the unit's. If not, reinforce before installation. (Refer to the install cardboard and find where should be reinforced)  
The appliance shall not be installed in laundry.

**Cautions:** There will be lots of lampblack and dust stick on the acentric, heat exchanger and water pump in dining room and kitchen, which would reduce the capacity of heat exchanger, lead water leakage and abnormal operation of the water pump.

The following treatment should be taken under this circumstance:

Ensure that the smoke trap above cooker has enough capacity to obviate lampblack to prevent the indraft of the lampblack by the air conditioner.

Keep the air conditioner far from the kitchen so that the lampblack would not be indraft by the air conditioner.

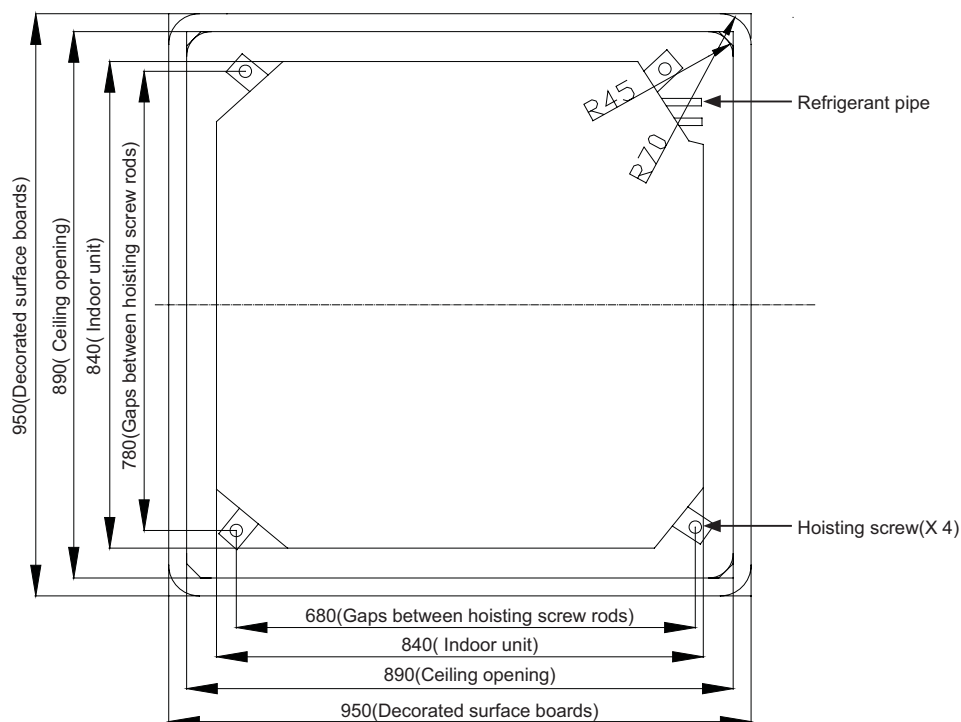
### 1.2.3 Dimension Data

(1). Important notice:

To guarantee the good performance, the unit must be installed by professional personnel according with this instruction.

Please contact the local Gree special nominated repair department before installation. Any malfunction caused by the unit that is installed by the department that is not special nominated by Gree would not deal with on time by the inconvenience of the business contact.

(2). Dimension of ceiling opening and location of the hoisting screw (M10)



GKH24TK1BI/ GKH30TK1BI/ GKH36TK1BI/ GKH42TK1BI/ GKH48TK1BI/  
GKH24TK1B2I / GKH30TK1B2I / GKH36TK1B2I / GKH42TK1B2I / GKH48TK1B2I

Figure 1-3-2

The drilling of holes in the ceiling must be done by the professional personnel.

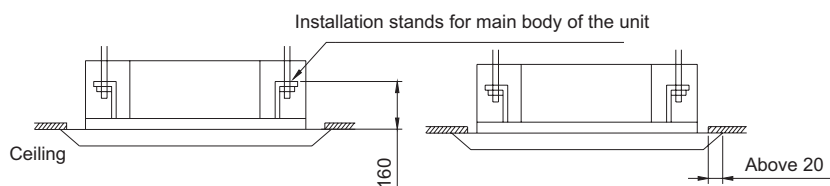


Figure 1-3-3

**Cautions:** The dimension for the ceiling openings with \* marks can be as large as 910mm. But the overlapping sections of the ceiling and the decorated surface boards should be maintained at no less than 20mm.

### (3). Main body of hoisting air conditioner

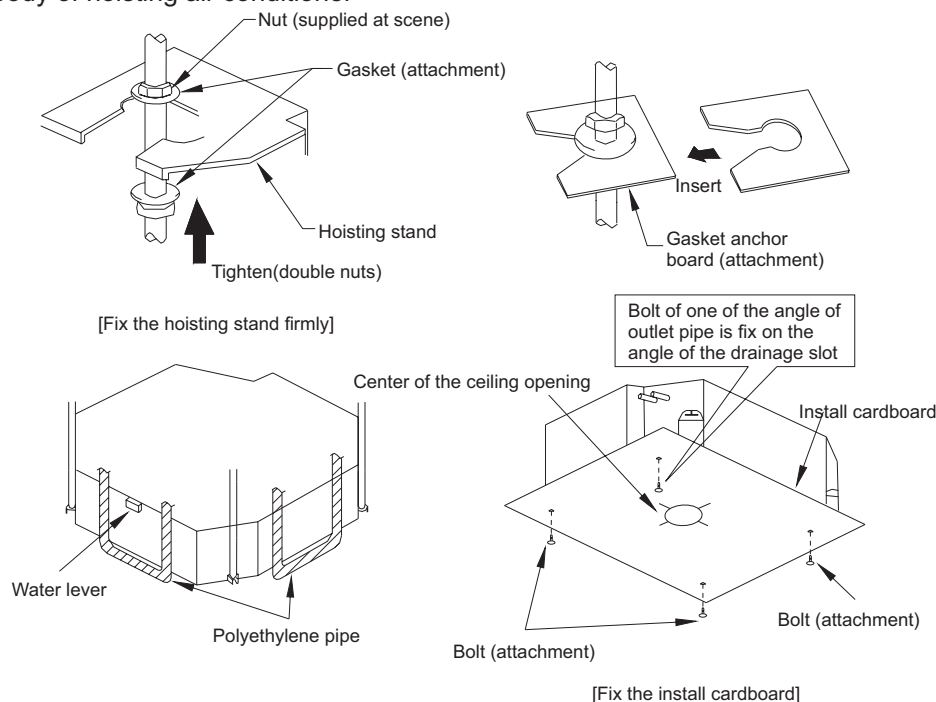


Figure 1-3-4

- ◆ The primary step for install the indoor unit.

When attach the hoisting stand on hoisting screw, do use nut and gasket individually at the upper and lower of the hoisting stand to fix it. The use of gasket anchor board can prevent gasket break off.

- ◆ Use install cardboard

Please refer to the install cardboard about the dimension of ceiling opening.

The central mark of the ceiling opening is marked on the install cardboard.

Install the install cardboard on the unit by bolt (3 piece), and fix the angle of the drainage pipe at the outlet vent by bolt.

- ◆ Adjust the unit to the suitable install place.
- ◆ Check if the unit is horizontal.

Inner drainage pump and bobber switch are included in the indoor unit, check if 4 angle of every unit are horizontal by water lever. (If the unit is slant toward the opposite of the coagulate water flow, there may be malfunction of the bobber switch and lead water drop.)

- ◆ Back out the gasket anchor board used to prevent gasket break off and tighten the nut on it.
- ◆ Back out the install cardboard.

Cautions: Please do tighten the nuts and bolts to prevent air conditioner break off.

#### 1.2.6 Drain Piping Work

##### (1). Installation of Drainage Pipeline

When connecting the drainage pipe with the unit, do not apply excessive force to the pipeline at the side of the unit. The fixing position of the pipeline shall be near the unit.

Purchase general-purpose hard PVC pipe locally to be used as the drainage pipeline. When carrying out connection, place the end of the PVC pipeline into the drainage hole. Use flexible drainage tube and tighten it with thread loop. Never use adhesive to connect the drainage hole and the flexible drainage tube. (As shown in Figure 1-3-7)

When the laid drainage pipe is used for multiple units, the common pipe shall be about 100mm lower than the drainage outlet of each set of unit. A pipe with thicker wall shall be used for such purpose.

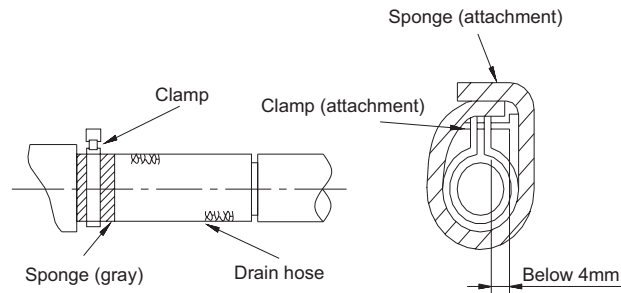


Figure 1-3-7

### (2). Testing of Drainage System

After the electrical installation is completed, carry out the testing of the drainage system.

During the test, check if the water correctly flows through the pipelines. Carefully observe the joints to ensure that there is no leakage. If the unit is to be installed in a new house, carry out testing before decorating the ceiling.

### (3). Matters of Attention

The diameter of the drain hose should be equal or bigger than the connection pipe's. ( The diameter of polythene pipe: Outer diameter 25mm Surface thickness  $\geq 1.5\text{mm}$ )

Drain hose should be short and drooping gradient should at less 1/100 to prevent the formation of air bubble.

If drain hose cannot has enough drooping gradient, drain raising pipe should be added.

To prevent bent of the drain hose, the distance between hoisting stand should is 1 to 1.5m. (As shown in Figure 1-3-8)

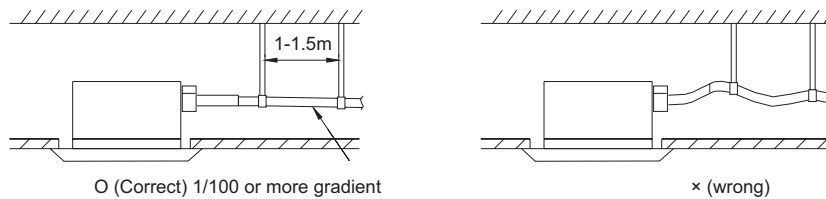


Figure 1-3-8

The install height of the drain raising pipe should less than 280mm.

The drain raising pipe should form a right angle with the unit, and distance to unit should not beyond 300mm. (As shown in Figure 1-3-9)

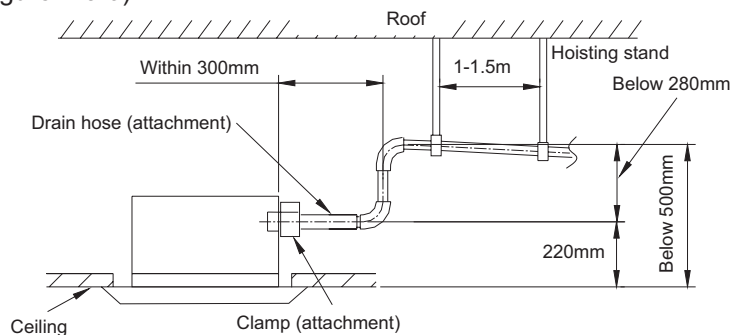


Figure 1-3-9

The slant gradient of the attached drain hose should be within 75mm so that the drain hole doesn't has to endure the unnecessary outside force. (As shown in Figure 1-3-10)

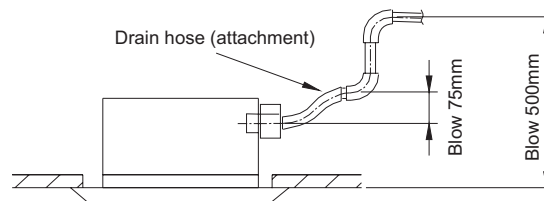


Figure 1-3-10

Please install the drain hose according to the following process if several drain hoses join together. (As shown in Figure 1-3-11)

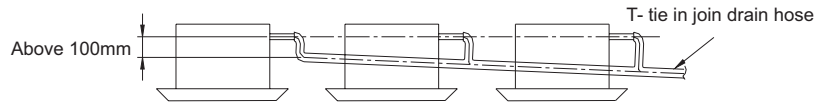


Figure 1-3-11

Check the smoothness of drain after installation.

Check the drain state by immiting 600cc water slowly from the outlet vent or test hole. (As shown in Figure 1-3-12)

Check the drain in the state of refrigerating after installation of the electric circuit.

[Way of immiting]

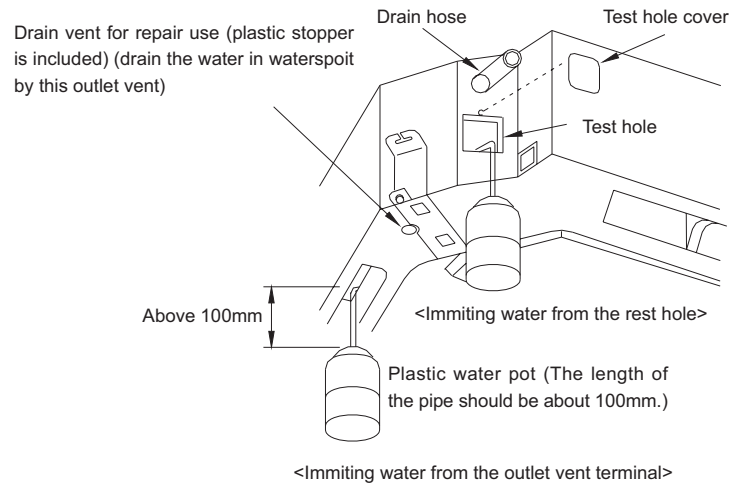


Figure 1-3-12

### 1.2.7 Installation of panel

Set the panel to the indoor unit body by matching the position of the swing flap motor of the decoration panel to the piping position of the indoor unit as shown in Figure 1-3-13.

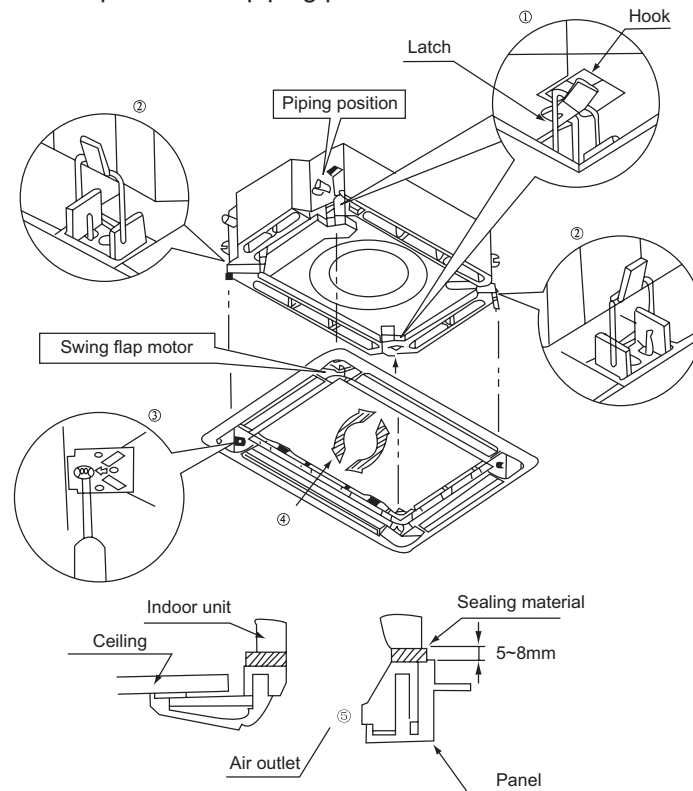


Figure 1-3-13

- ◆ Hang the latch, which is located on the opposite side of the swing flap motor on the panel, temporarily



to the back of the indoor unit. (2 Positions)

- ◆ Temporarily hang the remaining 2 latches to the hooks on the sides of the indoor unit. (Be careful not to let the swing motor lead wire get caught in the sealing material.)
- ◆ Screw all 4 hexagon head screws located right beneath the latches in approximately 15mm. (Panel will rise)
- ◆ Adjust the panel by turning it to the arrowed direction in Fig.4 so that the ceiling opening is completely covered.
- ◆ Tighten the screws until the thickness of the sealing material between the panel and the indoor unit body is reduced to 5~8 mm.

(1). Precautions

- ◆ Improper screwing of the screws may cause the troubles shown in Figure 1-3-14.

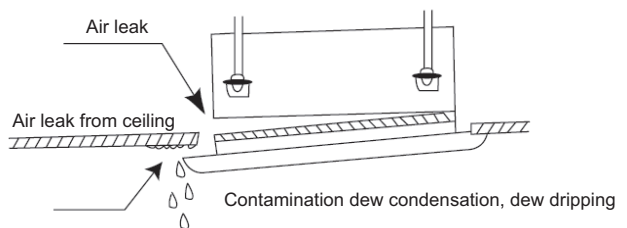


Figure 1-3-14

- ◆ If gap is still left between the ceiling and the panel after screwing the screws, readjust the height of the indoor unit body (Refer to Figure 1-3-15)

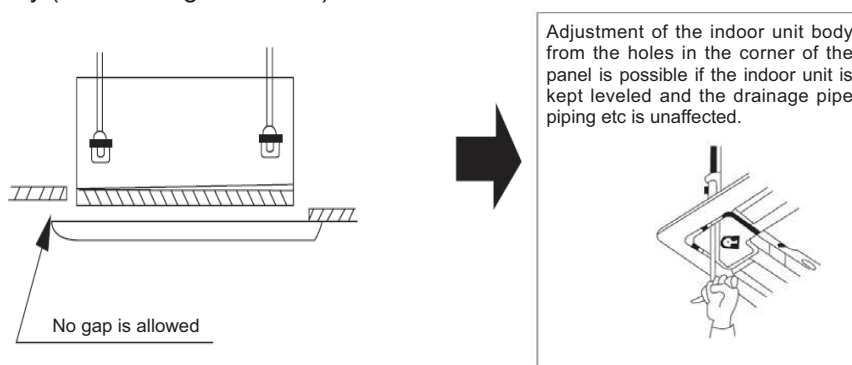


Figure 1-3-15

- ◆ After fixing be sure no gap left between the ceiling and the panel

(2). Wiring of the decoration panel.

- ◆ Connect the joints for swing flap motor lead wire (at 2 places) installed on the panel (Refer to Figure 1-3-16)

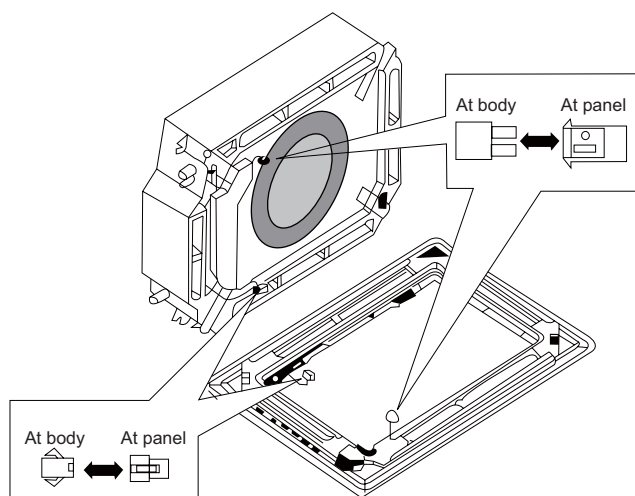


Figure 1-3-16

◆ Wiring Diagram of the Front Panel and the Main Body(for the new panel)

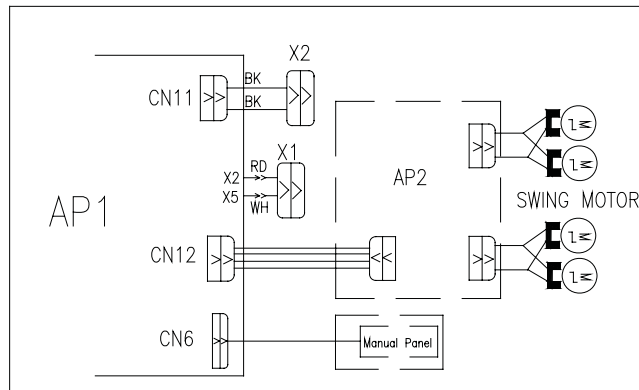


Figure 1-3-17

- (3). Wrap connecting pipe and the joints that have not insulated with sponge and bind them up with plastic tape(for the new panel).
- (4). See the figure below for the relationship of the front panel and the connecting pipe(for the new panel).

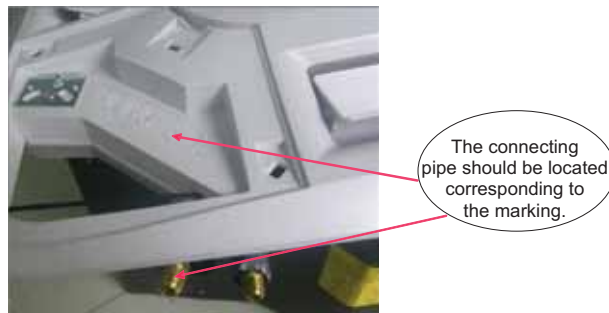


Figure 1-3-18

- (5). Corner Cap(for the new panel)

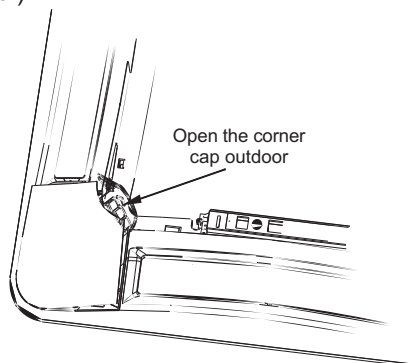


Figure 1-3-19

## 2 OUTDOOR UNIT INSTALLATIONS

### 2.1 Before Installation

- ◆ After receiving the machine, check if there is any damage during transportation. If there is damage on the surface or inside, inform the carrier or equipment supplier in written form immediately.
- ◆ After receiving the machine, check the unit and its accessories according to the packing list. Confirm that the model is the same and the unit is intact. At the same time, check the specification and quantity of the accessories.
- ◆ Select the correct route and method of transportation to avoid damage of the unit and any accident incurred. Out of protecting the unit and security consideration, it is advised that move the unit with its package. Even if that is forbidden in special situation, don't remove the carton to avoid looseness and drop.
- ◆ Check if the installation base is solid. When the unit is installed in the metal part of the building, must make sure electric insulation and make sure that it conforms with related standards.
- ◆ Make sure that the installation site is far away from where the flammable or explosive substances are stored to avoid explosion or fire may occurred by leakage of such substances.

### 2.2 Installation Site

- ◆ To ensure the unit in proper function, selection of installation location must be in accordance with following principles:
- ◆ Outdoor unit shall be installed so that the air discharged by outdoor unit will not return and that sufficient space for repair shall be provided around the machine.
- ◆ The installation site must have good ventilation, so that the outdoor unit can take in and exhaust enough air. Ensure that there is no obstacle for the air intake and exhaust of the outdoor unit. If there is any obstacle blocking the air intake or exhaust, remove it.
- ◆ Place of installation shall be strong enough to support the weight of outdoor unit, and it shall be able to insulate noise and prevent vibration. Ensure that the wind and noise from the unit will not affect your neighbors.
- ◆ Avoid direct sunshine over the unit. It is better to set up a sun shield as the protection.
- ◆ Place of installation must be able to drain the rainwater and defrosting water.
- ◆ Place of installation must ensure the machine will not be buried under snow or subject to the influence of rubbish or oil fog.
- ◆ The installation site must be at a place where the air exhaust outlet does not face strong wind.
- ◆ Lift the outdoor unit with indicated holes for hoist. Protect the unit from collision when lifting, in case it will rust.
- ◆ Rubber shock pad and rubber junction shall be applied to meet the requirements of noise and vibration.
- ◆ Installation dimensions shall comply with the instruction manual and the outdoor unit shall be fixed.
- ◆ Installation of the unit shall be executed by professionals.

### 2.3 Cautions for Installation

- ◆ The installation of the outdoor unit shall guarantee that the discharged air will return and enough service space shall be reserved around the unit.
- ◆ Installation site shall be good ventilation so that the unit can intake and discharge adequate air. Make sure that there is no obstruction for air inlet and out let. If there is, please remove such obstructions.
- ◆ If the unit is installed on the solid surface, fix the unit with M10 bolts and nuts and make sure the erection and horizontality of the unit.
- ◆ Lift the outdoor unit with indicated holes for hoist. Protect the unit from collision when lifting, in case it will rust.
- ◆ Rubber shock pad and rubber junction shall be applied to meet the requirements of noise and vibration
- ◆ If drain pipe shall be installed, insert the joints of drainage into outlet in base plate of the outdoor unit. And then connect the joints with an drain pipe.
- ◆ Wall bushing shall be installed when pipe goes through the wall.
- ◆ Installation dimensions shall comply with the instruction manual and the outdoor unit shall be fixed.
- ◆ Installation of the unit shall be executed by professionals.

## 2.4 Dimension Data

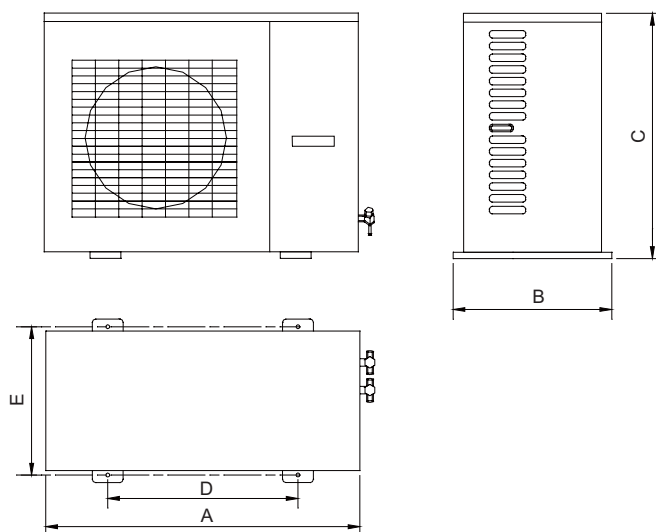


Fig. 2-4-1

Unit:mm

Model Item	GUHN24TK1AO GUCN24TK1AO	GUHN30TK1AO GUCN30TK1AO	GUHN36TK1AO GUCN36TK1AO GUHN36TM1AO GUCN36TM1AO	GUHN42TM1AO GUCN42TM1AO GUHN48TM1AO GUCN48TM1AO	GUHN60TM1AO GUCN60TM1AO
A	1018	980	1018	1107	1032
B	412	427	412	440	412
C	695	790	840	1100	1250
D	572	610	572	631	572
E	378	395	378	400	378

## 2.5 Installation Clearance Data

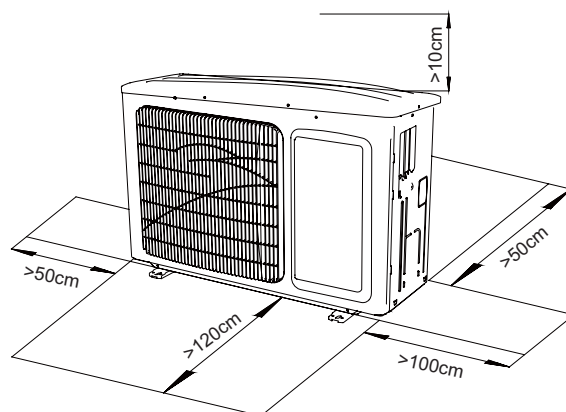


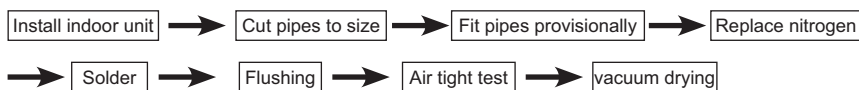
Fig. 2-5-1

### 3 REFRIGERATION PIPING WORK

#### 3.1 Refrigeration Piping Work Procedures

##### (1). Connecting Pipe

- Operational steps



The "3 principles of refrigerant piping" must be strictly observed		
	Case of problem	Action to avoid problem
Dry	• Rainwater, work water, etc, gets into pipes from outside	Pipe covering → Flushing → Vacuum drying
	• Moisture generated inside pipes due to condensation	
Clean	• Formation of oxides inside pipes during soldering	Replace nitrogen → Flushing Pipe covering
	• Dirt, dust or other foreign matters gets into the pipe	
Air tight	• Lead from soldered area	Use the proper materials(copper pipe solder .etc) Adhere strictly to standard flaring work practice Adhere strictly to standard flange connection work practice Air tight test
	• Leak from flared area	
	• Leak from flange area	

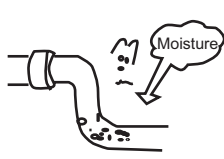


Dry	Clean	Air tight
Make sure there is no moisture inside the pipes	Make sure there is no dirt inside the pipe	Make sure the refrigerant does not leak out
		

Figure 3-1-1

- Match the flaring of copper pipe to the center of screwed connection, and then screw the flared nut up by hands.
- Screw flaring nut with torque wrench until the spanner clatters, which is shown as figure 3-1-1.

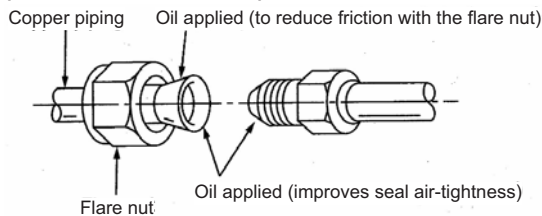


Figure 3-1-2

Form 3-1-1 the tightening torque needed for tightening nut

Diameter of Pipe	Tightening torque
1/4 (inch)	15-30 (N·m)
3/8 (inch)	35-40 (N·m)
5/8(inch)	60-65 (N·m)
1/2(inch)	45-50 (N·m)
3/4(inch)	70-75(N·m)
7/8(inch)	80-85(N·m)

- ◆ Degree of curvature of the tubing cannot be too small or the pipe might be broken up. When bend the piping, bending apparatus shall be applied.
- ◆ Brazing port shall be downward and horizontal when brazing the pipeline. Try to avoid the upward brazing as shown in figure 3-1-3 which easily affects welding quality and causes leakage.

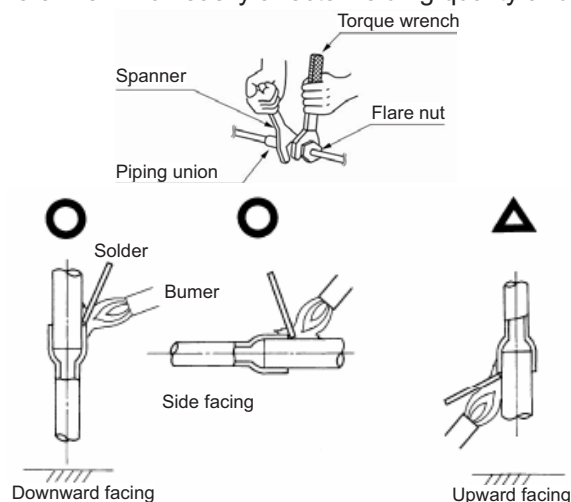


Figure 3-1-3

- ◆ Wrap connecting pipe and the joints that have not insulated with sponge and bind them up with plastic tape.
- (2). Vacuuming and leak test.
- ◆ Remove the bonnets of gas valve and liquid valve.
  - ◆ Aim at the center of the pipe and screw the nut of connecting pipe tightly with hands
  - ◆ Screw nuts tightly with spanner.
  - ◆ Remove check valve bonnet of gas valve.
  - ◆ Unscrew the stem of gas valve for 1/4 circle with hexagon spanner and at the same time, open the stem by screwdriver to discharge gas.
  - ◆ Discharge the gas for 15s until gas of refrigerants appears. And then, shut the check valve and screw the bonnet tightly.
  - ◆ Open stem of gas valve and liquid valve completely ( as figure 3-1-4)

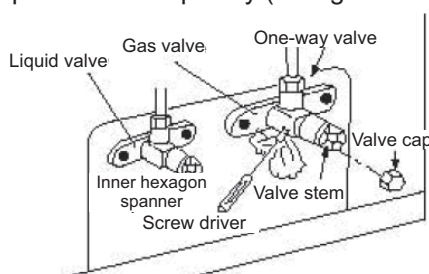


Figure 3-1-4

- ◆ Screw the bonnet tightly and then detect if there is any leakage on the joint connecting indoor and outdoor unit and pipeline by soap water and Leakage detector.
- ◆ Caution:
- ◆ If possible, it is better to use vacuum pump to discharge the air inside the piping and indoor unit from the service port. The method of using vacuuming is as follows:
- ◆ Take out the flare nut cover of the liquid and gas valve service port.
- ◆ Connect the manifold gauge to the vacuum pump, with the low-pressure end linked to the gas valve and the high-pressure linked to the liquid valve. (As shown in Figure 3-1-5)

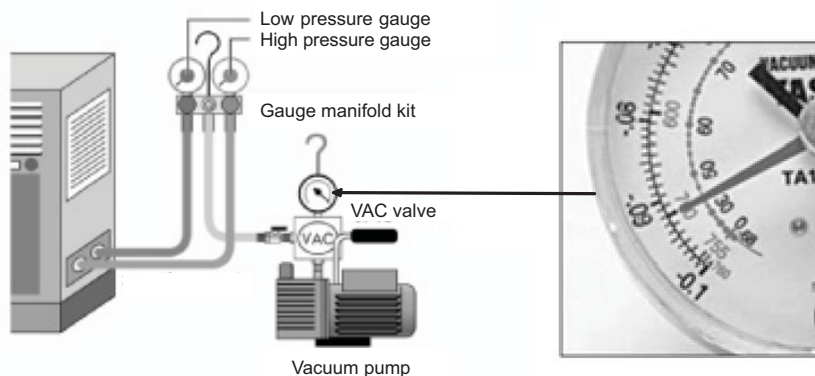


Figure 3-1-5

- ◆ Start the vacuum pump. When the low pressure gauge turns to 760mmHg. close the low pressure handle and stop the vacuum pump. Then, keep this status for 15 minutes to ensure the low pressure gauge remain the same.
- ◆ Take out the valve cap of the gas valve together with the liquid valve.
- ◆ Loose the stem of liquid valve until the pressure rises to 0 Kg/cm<sup>2</sup>.
- ◆ Dismantle the base from the gas and then tighten the flare unit.
- ◆ Loose the valve stem of the gas valve as well as the liquid valve entirely.
- ◆ Tighten the valve stem of the gas valve and liquid valve so as to check whether leakage occurs.

(3). Installation of Protective Layer of Connecting Pipe

- ◆ To avoid generation of condensate on the connecting pipe and avoid leakage, the gas pipe and the liquid pipe of the connecting pipe must be covered by thermal insulation materials, be bundled by adhesive tape, and be isolated from ambient air.
- ◆ The joint connecting to the indoor unit must be wrapped by thermal insulation material. There shall be no gap between the connecting pipe joint and the wall of the indoor unit. Refer to Figure 3-1-6.

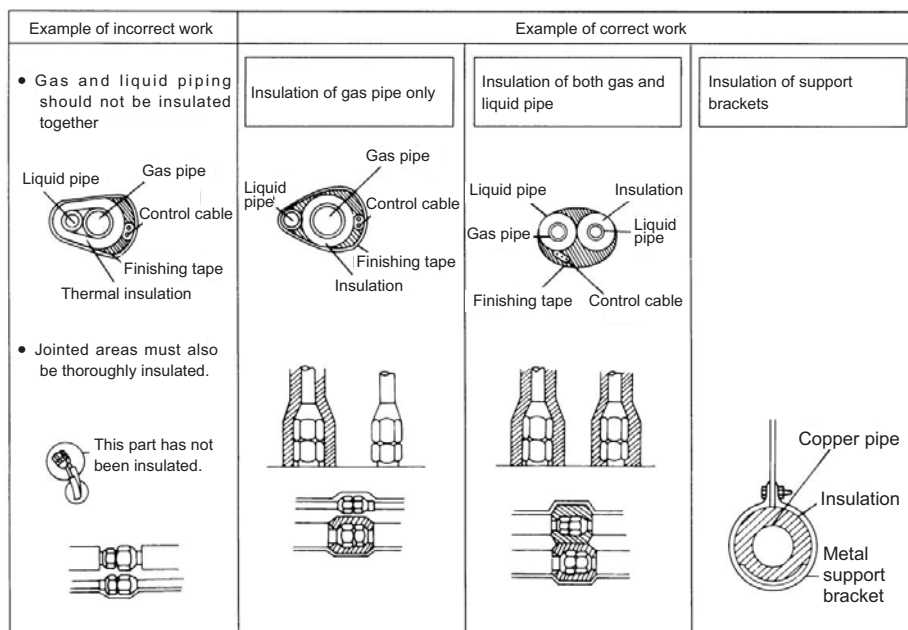


Figure 3-1-6

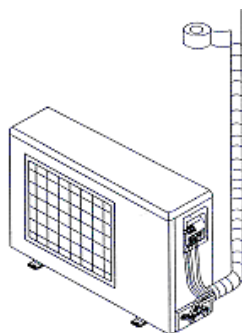


Figure 3-1-7

- ◆ Use adhesive tape to bundle the connecting pipe and the cables together. To prevent condensate from overflowing out from the drainage pipe, separate the drainage pipe from the connecting pipe and the cables.
- ◆ Use thermal insulation tape to wrap the pipes from the bottom of the outdoor unit until the upper end of the pipe where the pipe enters the wall. When wrapping thermal insulation tape, the later circle of tape must cover half of the former circle of tape (Figure 3-1-7).
- ◆ Wrapped pipe must be fixed to wall using pipe clamps.

**Caution:**

- ① . After the pipes are wrapped by protective materials, never bend the pipes to form sharp angle. otherwise the pipes may crack or break.
- ② . Do not wrap the protective tape too tight, otherwise the efficiency of thermal insulation may be decreased. Ensure that the condensate drainage flexible tube is separate from the bundled pipes.
- ③ . After the protective work is completed and the pipes are wrapped, use seal material to block the hole in the wall, so as to prevent rain and wind from entering the room.

**3.2 Cautions in Connecting Pipes**

Layout of connecting pipeline shall comply with the following principles according to actual situation.

- ◆ The length of connecting pipe shall be short as much as possible and it is better to restrain the length within 5m.
- ◆ Shorten the height difference between indoor and outdoor unit as much as possible.
- ◆ Lessen the quantity of elbows as much as possible.
- ◆ When the length of connecting pipe exceeds 20m, check if the lubricant of the system is enough. If not, add some in the oil trap properly.
- ◆ Refrigerants volume inside the outdoor unit suit for connecting pipe with 7m. If connecting pipe shall be prolonged, refrigerants shall be added accordingly. Every 1m prolonged, the added volume of refrigerant can refer to the sheet below. Allowable max. length of pipe is 30m.
- ◆ When installing the unit, if difference in height between indoor and outdoor unit exceeds 10m, one oil loop is required every 6m.
- ◆ When the difference in height between indoor and outdoor units is different, please refer to Figure 3-2-1 for layout of pipeline.

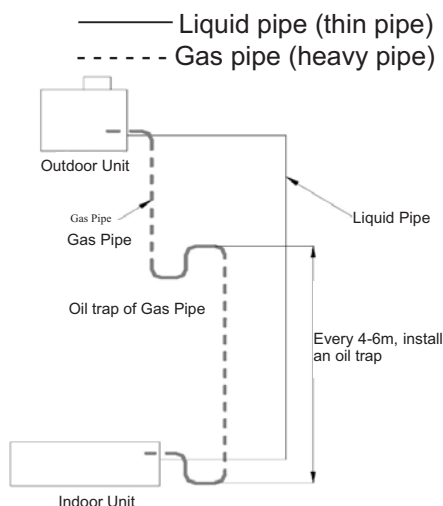


Figure 3-2-1



### 3.3 Specification of Connection Pipe

Model	External Diameter		Maximum Length of Connection Pipe	Maximum Difference in Height between Outdoor and Indoor Unit	Additional Charge of Refrigerant
	Gas Pipe	Liquid Pipe	(m)	(m)	(g/m)
GUHN24TK1AO GUCN24TK1AO	φ5/8"	φ3/8"	30	15	60
GUHN30TK1AO GUCN30TK1AO					
GUHN36TM1AO GUCN36TM1AO	Φ3/4"	Φ1/2"	50	30	120
GUHN42TM1AO GUCN42TM1AO					
GUHN48TM1AO GUCN48TM1AO					
GUHN60TM1AO GUCN60TM1AO	Φ3/4"	Φ1/2"	50	30	120

## 4 ELECTRIC WIRING WORK

### 4.1 Wiring Principle

#### 4.1.1 General

- ◆ Perform wiring of the power supply in conformance with the regulations of the local electric company.
- ◆ For the control wires connecting indoor units, and between indoor and outdoor units, use of double-core shield wires is recommended to prevent noise trouble.
- ◆ Be sure to set the earth leakage breaker and the switches to the power supply section of the indoor unit.
- ◆ Supply power to each outdoor unit and provide an earth leakage breaker or hand switch for each outdoor unit.
- ◆ Store wiring system for control and refrigerant piping system in the same line.
- ◆ Arrange the cables in the way that the electric wires do not come to contact with high-temperature part of the refrigerant pipe; otherwise coating melts and an accident may happen.
- ◆ Do not turn on power of the indoor unit until vacuuming of the refrigerant pipe is completed.
- ◆ Installation should be conducted by Local Wiring Regulation.
- ◆ The rated voltage and exclusive power supply must be adopted for the air conditioners.
- ◆ The power cable should be reliable and fixed, in order to avoid the wiring terminal suffering outside force. And do not drag the power cable forcibly.
- ◆ The wire diameter of power cable should be large enough. If the power cable and connection wire are damaged, they should be replaced by the dedicated ones.
- ◆ All electric installation must be done by specialists according to local law, regulation and this manual.
- ◆ It should be reliably grounded, and it should be connected to the special earth device, the installation work should be operated by the professional.
- ◆ The creep age protect switch and breaker must be installed.
- ◆ Breaker should have the thermal dropout and magnetic dropout function, in order to avoid the short circuit and overload.
- ◆ The on-site connection should refer to the circuit diagram, which is stuck on the unit body.
- ◆ The unit should be reliably grounded, If not, electric shock or fire may be caused.
- ◆ Air conditioner is the "I" class electric appliance, so please do conduct reliable grounding measure.
- ◆ The yellow-green two-color wiring of air conditioner is grounding wire and cannot be used for other purposes. It cannot be cut off and be fixed by screw, otherwise it would cause electric shock.
- ◆ The user must offer the reliable grounding terminal. Please don't connect the grounding wire to the following places:
  - ① . Water pipe;
  - ② . Gas pipe;
  - ③ . Blowing pipe;
  - ④ . Other places where are not approved by the specialist.

#### 4.1.2 Connection between Wire and Terminal of Patch Board.

**Caution:** Before installing the electrical equipment, please pay attention to the following matters which have been specially pointed out by our designers:

- ① . Check to see if the power supply used conforms to the rated power supply specified on the nameplate.
- ② . The capacity of the power supply must be large enough. The section area of wiring in the room
- ③ . shall be larger than 2.5mm<sup>2</sup>.
- ④ . The lines must be installed by specialists.
- ⑤ . An electricity leakage protection switch and an breaker with gap between electrode heads larger than 3 mm shall be installed in the fixed line.

3 mm shall be installed in the fixed line.

##### (1). Connection of single wire

Use wire stripper to strip the insulation layer (25mm long) from the end of the single wire.

Remove the screw at the terminal board of the air-conditioning unit.

Use pliers to bend the end of the single wire so that a loop matching the screw size is formed.

Put the screw through the loop of the single wire and fix the loop at the terminal board.

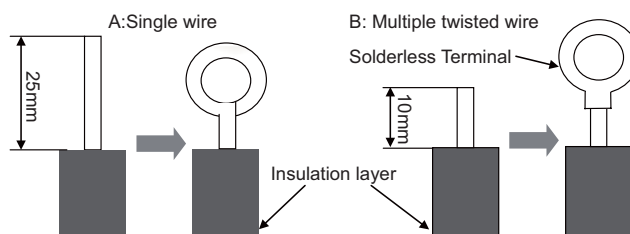
##### (2). Connection of multiple twisted wires

Use wire stripper to strip the insulation layer (10mm long) from the end of the multiple twisted wires.

Remove the screw at the terminal board of the air-conditioning unit.

Use crimping pliers to connect a terminal (matching the size of the screw) at the end of the multiple twisted wires.

Put the screw through the terminal of the multiple twisted wires and fix the terminal at the terminal board.



If the power supply flexible line or the signal line of the equipment is damaged, only use special flexible line to replace it.

- ◆ Before connecting lines, read the voltages of the relevant parts on the nameplate. Then carry out line connection according to the schematic diagram.
- ◆ The air-conditioning unit shall have special power supply line which shall be equipped with electricity leakage switch and air switch, so as to deal with overload conditions.
- ◆ The air-conditioning unit must be grounded to avoid hazard owing to insulation failure.
- ◆ All fitting lines must use crimp terminals or single wire. If multiple twisted wires are connected to terminal board, arc may arise.
- ◆ All line connections must conform to the schematic diagram of lines. Wrong connection may cause abnormal operation or damage of the air-conditioning unit.
- ◆ Do not let any cable contact the refrigerant pipe, the compressor and moving parts such as fan.
- ◆ Do not change the internal line connections inside the air-conditioning unit, otherwise the manufacturer would not liable for any loss or abnormal operation arising from wrong line connections.

#### 4.1.3 Power Cable Connection

##### (1). Air-conditioning unit with single-phase power supply

Remove the front panel of the outdoor unit.

Attach rubber bush to the cable-cross hole of the outdoor unit.

Pass the cable through rubber ring.

Connect the power supply cable to the "L, N" terminals and the grounding screw on the metal electric box.

Use cable fastener to bundle and fix the cable.

##### (2). Air-conditioning unit with 3-phase power supply

Remove the front panel of the outdoor unit.

Attach rubber bush to the cable-cross hole of the outdoor unit.

Pass the cable through rubber ring.

Connect the power cable to the terminal and earthing screws marked "L1, L2, L3 & N".

Use cable fastener to bundle and fix the cable.

**Caution:** For air-conditioner with auxiliary heater, it is required to connect the power cable to the "L1, L2 L3" terminals and the grounding screw.

#### 4.1.4 Connection of Signal Line of Wired Controller

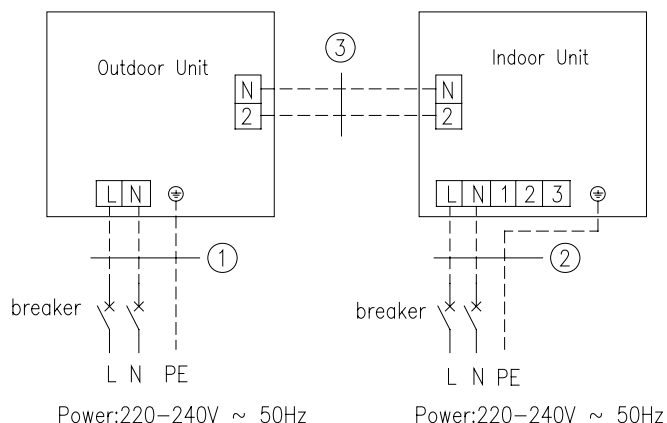
**Caution:** Take great care when carrying out the following connections, so as to avoid malfunction of the air-conditioning unit because of electromagnetic interference.

- ◆ The signal line of the wire controller must be separated from the power line and the connecting line between the indoor unit and the outdoor unit.
- ◆ In case the unit is installed in a place vulnerable to electromagnetic interference, it is better to use shielded cable or double-twisted cable as the signal line of the wired controller.
- ◆ Open the cover of the electrical box of the indoor unit.
- ◆ Pull the signal cable of the wired controller through the rubber bushing.
- ◆ Plug the signal line of the wired controller onto the 4-bit pin socket at the circuit board of the indoor unit.
- ◆ Use cable fastener to bundle and fix the signal cable of the wired controller.

#### 4.1.5 Connection of Wiring

- ◆ Disassemble right side panel and blow out hole for crossing wired on outdoor unit and cover it with cushion rubber.
- ◆ Remove cable cleat, connect the connecting wire of power supply to the terminal and fix it.
- ◆ Fix connecting wire of power supply and signal control wire with attached clamps but without applying external pressure on the terminal parts, and then connect the corresponding connector.
- ◆ Make sure that the wiring has been fixed.
- ◆ Install the front side plate.

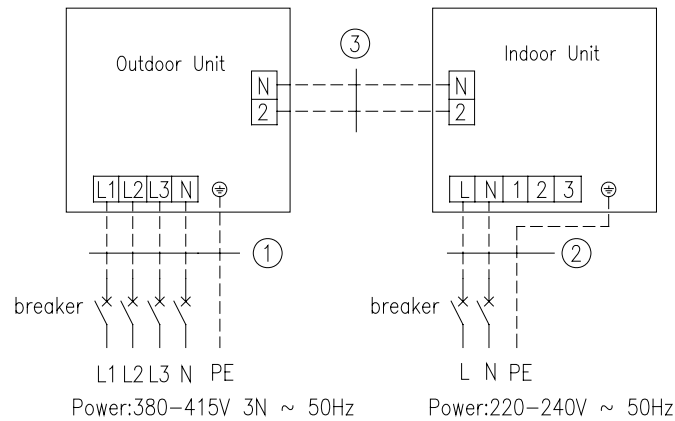
### 4.2 Electric Wiring Design



GUHN24TK1AO GUCN24TK1AO + GFH24TK1BI	
GUHN30TK1AO GUCN30TK1AO + GFH30TK1BI	
① . Power cord 3×4.0 mm <sup>2</sup> (H07RN-F)	② . Power cord 3×1.0 mm <sup>2</sup> (H05VV-F)
③ . Communication Cords 2×0.75mm <sup>2</sup> (H05RN-F)	

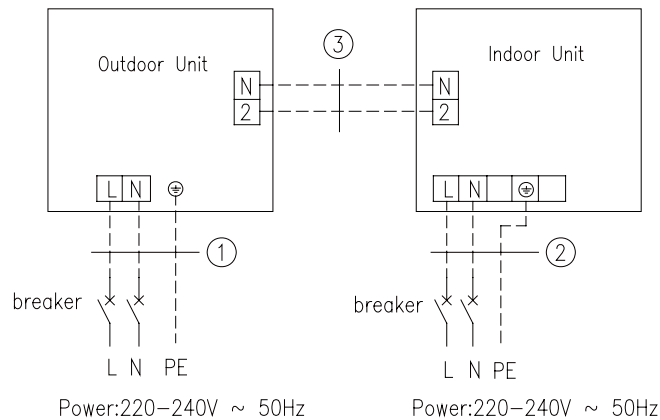
  

GUHN36TK1AO GUCN36TK1AO + GFH36TK1BI	
① . Power cord 3×6.0 mm <sup>2</sup> (H07RN-F)	② . Power cord 3×1.5 mm <sup>2</sup> (H05VV-F)
③ . Communication Cords 2×0.75 mm <sup>2</sup> (H05RN-F)	



GUHN36TM1AO GUCN36TM1AO + GFH36TK1BI	
① . Power cord 5×2.5 mm <sup>2</sup> (H07RN-F)	② . Power cord 3×1.5 mm <sup>2</sup> (H05VV-F)
③ . Communication Cords 2×0.75 mm <sup>2</sup> (H05RN-F)	

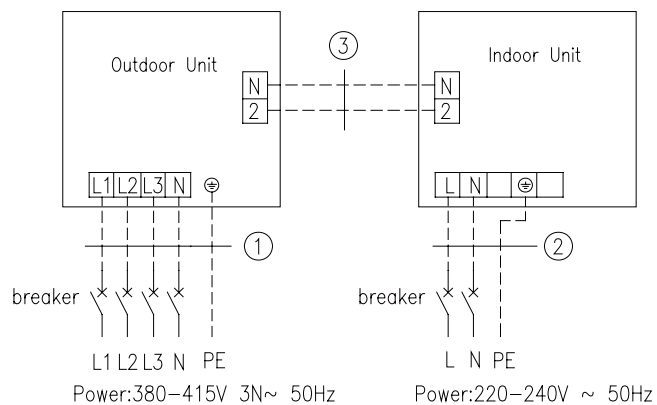
GUHN42TM1AO GUCN42TM1AO + GFH42TK1BI	
GUHN48TM1AO GUCN48TM1AO + GFH48TK1BI	
GUHN60TM1AO GUCN60TM1AO + GFH60TK1BI	
① . Power cord 5×4.0 mm <sup>2</sup> (H07RN-F)	② . Power cord 3×1.5 mm <sup>2</sup> (H05VV-F)
③ . Communication Cords 2×0.75 mm <sup>2</sup> (H05RN-F)	



GUHN24TK1AO+ GKH24TK1BI	
GUHN30TK1AO GUCN30TK1AO + GKH30TK1BI	
GUHN24TK1AO + GKH24TK1B2I	
GUHN30TK1AO + GKH30TK1B2I	
① . Power cord 3×4.0 mm <sup>2</sup> (H07RN-F)	② . Power cord 3×1.0 mm <sup>2</sup> (H05VV-F)
③ . Communication Cords 2×0.75mm <sup>2</sup> (H05RN-F)	

GUHN36TK1AO GUCN36TK1AO + GKH36TK1BI	
① . Power cord 3×6.0mm <sup>2</sup> (H07RN-F)	② . Power cord 3×1.5mm <sup>2</sup> (H05VV-F)
③ . Communication Cords 2×0.75mm <sup>2</sup> (H05RN-F)	

GUHN36TK1AO + GKH36TK1B2I	
① . Power cord 3×6.0mm <sup>2</sup> (H07RN-F)	② . Power cord 3×1.0mm <sup>2</sup> (H05VV-F)
③ . Communication Cords 2×0.75mm <sup>2</sup> (H05RN-F)	



GUHN36TM1AO GUCN36TM1AO + GKH36TK1BI	
GUHN36TM1AO + GKH36TK1B2I	
① . Power cord 5×2.5mm <sup>2</sup> (H07RN-F)	② . Power cord 3×1.5mm <sup>2</sup> (H05VV-F)
③ . Communication Cords 2×0.75mm <sup>2</sup> (H05RN-F)	

GUHN42TM1AO+ GKH42TK1BI	
GUHN48TM1AO GUCN48TM1AO + GKH48TK1BI	
GUHN42TM1AO + GKH42TK1B2I	
GUHN48TM1AO + GKH48TK1B2I	
① . Power cord 5×4.0 mm <sup>2</sup> (H07RN-F)	② . Power cord 3×1.5 mm <sup>2</sup> (H05VV-F)
③ . Communication Cords 2×0.75mm <sup>2</sup> (H05RN-F)	

### 4.3 Specification of Power Supply Wire and Air Switch

#### 4.3.1 Outdoor Unit

Model	Power Supply (V, Ph, Hz)	Capability of Air Switch	Minimum Sectional Area of Earth Wire	Minimum Sectional Area of Power Supply Wire
		(A)	(mm <sup>2</sup> )	(mm <sup>2</sup> )
GUHN24TK1AO GUCN24TK1AO	220-240, 1, 50	25	4.0	4.0
GUHN30TK1AO GUCN30TK1AO	220-240, 1, 50	25	4.0	4.0
GUHN36TK1AO GUCN36TK1AO	220-240, 1, 50	32	6.0	6.0
GUHN36TM1AO GUCN36TM1AO	380-415, 3, 50	16	2.5	2.5
GUHN42TM1AO GUCN42TM1AO	380-415, 3, 50	20	4.0	4.0
GUHN48TM1AO GUCN48TM1AO	380-415, 3, 50	25	4.0	4.0
GUHN60TM1AO GUCN60TM1AO	380-415, 3, 50	25	4.0	4.0

### 4.3.2 Indoor Unit

#### (1). Duct Type

Model	Power Supply (V, Ph, Hz)	Capability of breaker	Minimum Sectional Area of Earth Wire	Minimum Sectional Area of Power Supply Wire
		(A)	(mm <sup>2</sup> )	(mm <sup>2</sup> )
GFH24TK1BI	220-240, 1, 50	6	1.0	1.0
GFH30TK1BI	220-240, 1, 50	6	1.0	1.0
GFH36TK1BI	220-240, 1, 50	10	1.5	1.5
GFH42TK1BI	220-240, 1, 50	10	1.5	1.5
GFH48TK1BI	220-240, 1, 50	10	1.5	1.5
GFH60TK1BI				

#### (2). Cassette Type

Model	Power Supply (V, Ph, Hz)	Capability of Air Switch	Minimum Sectional Area of Earth Wire	Minimum Sectional Area of Power Supply Wire
		(A)	(mm <sup>2</sup> )	(mm <sup>2</sup> )
GKH24TK1BI	220-240, 1, 50	6	1.0	1.0
GKH30TK1BI		6	1.0	1.0
GKH36TK1BI		10	1.5	1.5
GKH42TK1BI		10	1.5	1.5
GKH48TK1BI		10	1.5	1.5
GKH24TK1B2I		6	1.0	1.0
GKH30TK1B2I		6	1.0	1.0
GKH36TK1B2I		10	1.5	1.5
GKH42TK1B2I		10	1.5	1.5
GKH48TK1B2I		10	1.5	1.5

# MAINTENANCE

## MAINTENANCE

### 1 TROUBLE TABLE

#### 1.1 Remote Controller Display Malfunction and Description

Malfunction Code	Trouble Case	Origin of Trouble Signal	Measure
E1	Actuation of High pressure switch	High pressure switch	Abnormality is detected when the contact of the high pressure switch opens for 3 sec. The system will be shut down. All buttons are deactivated except the on/off. This fault cannot be recovered automatically.
E2	Indoor anti-freezing Protection	Evaporator temperature thermistor of indoor unit	When cooling and dehumidifying have been running for a period of time, if it is detected that the temperature of the evaporator temperature sensor is lower than the protective set point temperature, then an alarm will be given and the compressor and outdoor unit fan motor will stop; if it is detected that the temperature goes up beyond the protective set point temperature and the compressor has been stopped for three minutes, then the unit will resume running.
E3	Actuation of low pressure switch	Low pressure switch	When the unit is running or on standby (the compressor has been operated for more than 3mins), the low pressure switch opens for more than 30sec and the screen will display malfunction code.
E4	Abnormal discharge temperature	Discharge temperature thermistor	After the startup of compressor, the discharge temperature is higher than 130°C for more than 30sec, malfunction code (E4) will be displayed on the screen and the system will be shut down. After stopping the compressor for 3 mins, if the discharge temperature thermistor detects that the discharge temperature is lower than 90°C for more than 5 sec, the compressor will re-start. After retry for three times, the malfunction can not be corrected and can not be cancelled automatically.
E5	Compressor overheat	Compressor	After the startup of the compressor, if the overload switch opens for more than 3 sec, the malfunction of the overheat for the compressor will be displayed on the screen. After the compressor has been stopped for 3 mins, if the malfunction has been recovered, the compressor will re-start. When overheat activates 3 times within 30mins, the malfunction of overheat will be determined according to the retry 3 times. The reset for the malfunction of overheat is manual reset. Therefore, the malfunction of overheat cannot be recovered automatically. Press ON/OFF button to recover.
E6	Malfunction of communications	Communication	Check the communication state between the indoor unit PCB and outdoor unit PCB by micro-computer. Abnormality is detected when the correct communication is not conducted in 30se. When the malfunction of communication occurs, the system will be shut down and LED on the remote controller will blink and the screen will display the malfunction code (E6).The reset for the communication failure is automatic reset
E9	Malfunction of drain water level	Liquid water level	When a liquid water level switch opens for more than 8 seconds, it means a malfunction occurs to the drain water level. In this case, the LED on the remote controller will blink and the malfunction code (E9) will be displayed on the screen. Beside, the reset for the water level protection can only be done manually.



F0	Malfunction of indoor room temperature thermistor at air intake	Indoor room thermistor	Malfunction of indoor room temperature thermistor at air intake is detected when a short circuit or an open circuit in the indoor room temperature thermistor for more than 5 sec. The indoor room temperature value will be set at 24°C forcibly. The reset for the malfunction of indoor room temperature thermistor is automatic. If the malfunction of indoor room temperature thermistor will be reset in air supply mode, the malfunction code (F0) will disappear on the screen and the indoor unit fan will run normally.
F1	Malfunction of evaporator temperature thermistor	Evaporator temperature thermistor	Malfunction of evaporator temperature thermistor is detected when there is a short circuit or an open circuit in the evaporator temperature thermistor for more than 5 sec. The system will be shut down in cooling operation and dehumidifying operation. The screen will display the malfunction code (F1). The reset for the malfunction of evaporator temperature thermistor is automatic. In air supply mode, the screen will display the malfunction code (F1). However, the indoor unit fan will run normally in this case.
F2	Malfunction of condenser temperature thermistor	Condenser temperature thermistor	Malfunction of condenser temperature thermistor is detected when there is a short circuit or an open circuit in the condenser temperature thermistor for more than 5 sec. The system will be shut down in cooling operation and dehumidifying operation. The screen will display the malfunction code (F2). The reset for the malfunction of condenser temperature thermistor is automatic. In air supply mode, the screen will display the malfunction code (F2). However, the indoor unit fan will run normally in this case.
F3	Malfunction of outdoor ambient temperature thermistor	Outdoor ambient temperature thermistor	Malfunction outdoor ambient temperature thermistor is detected when there is a short circuit or an open circuit in the outdoor ambient temperature thermistor for more than 5 sec. The system will be shut down in cooling operation and dehumidifying operation. The screen will display the malfunction code (F3). The reset for the malfunction of condenser temperature thermistor is automatic. In air supply mode, the screen will display the malfunction code (F3). However, the indoor unit fan will run normally in this case.
F4	Malfunction of discharge temperature thermistor	Discharge temperature thermistor	Malfunction is detected when there is a short circuit or an open circuit in the discharge temperature thermistor for more than 5 sec. The system will be shut down in cooling operation and dehumidifying operation. The screen will display the malfunction code (F4). The reset for the malfunction of discharge temperature thermistor is automatic. In air supply mode, the screen will display the malfunction code (F4). However, the indoor unit fan will run normally in this case.
F5	Malfunction of Indoor Room temperature thermistor at Wired Remote Controller	Indoor room temperature thermistor	Malfunction is detected when there is a short circuit or an open circuit in the indoor room temperature thermistor for more than 5 sec. The system will be shut down in cooling operation and dehumidifying operation. The screen will display the malfunction code (F5). The reset for the malfunction of discharge temperature thermistor is automatic. In air supply mode, the screen will display the malfunction code (F5). However, the indoor unit fan will run normally in this case.

## 1.2 Cassette Type Indoor Unit's Error Indicating

LED	No error	Flash times every two seconds	Error description
yellow: Timing indicating lamp	It goes on as per the set time, And it flashes when the temperature sensor error occurs	once	the indoor ambient temperature sensor error
		twice	the evaporator temperature sensor error
		three times	the condenser temperature sensor error
		four times	the outdoor ambient temperature sensor error
		five times	the discharge air temperature sensor error
green: Compressor indicating lamp	It goes on/off as the compressor is turned on/off. And it flashes when defrosting or the compressor error occurs	twice	Defrosting
		three times	high pressure protection
		four times	the low pressure protection
		five times	Overload protection
		six times	Discharge high temperature protection
red:Running indicating lamp	It goes on/off as the unit is turned on/off, And it flashes when the indoor unit error occurs	once	Malfunction of communications
		twice	the water overflow protection
		three times	the anti-freezing error
		four times	Anti-high temperature protection

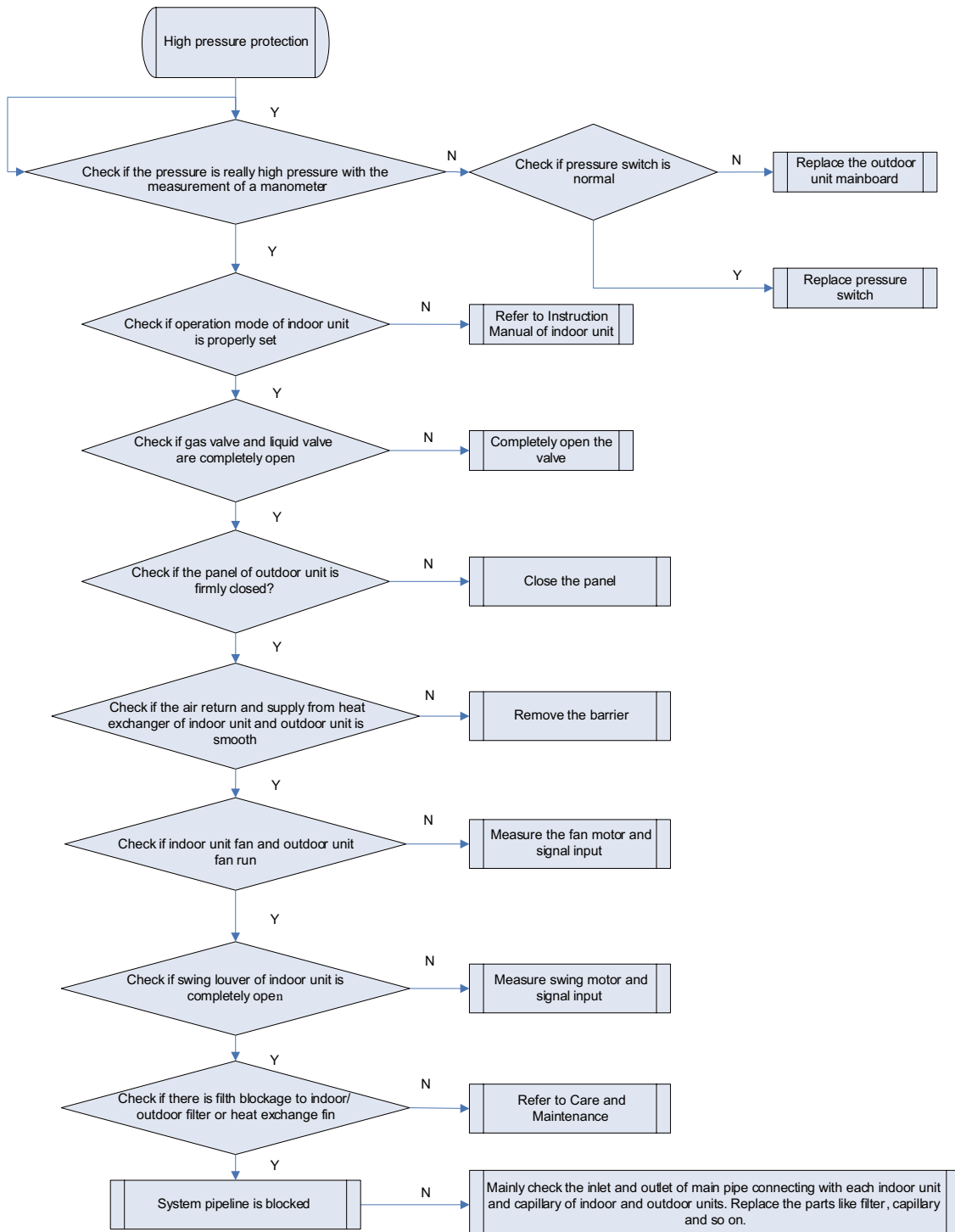
## 2 FLOW CHART OF TROUBLE SHOOTING

Service engineers shall collect the malfunction information as much as possible and then research it thoroughly. Besides, they should list those electrical parts which may cause malfunction and determine where the problem really is and finally sort out the perfect solution. Observe the status of the complete device but not the partial device.

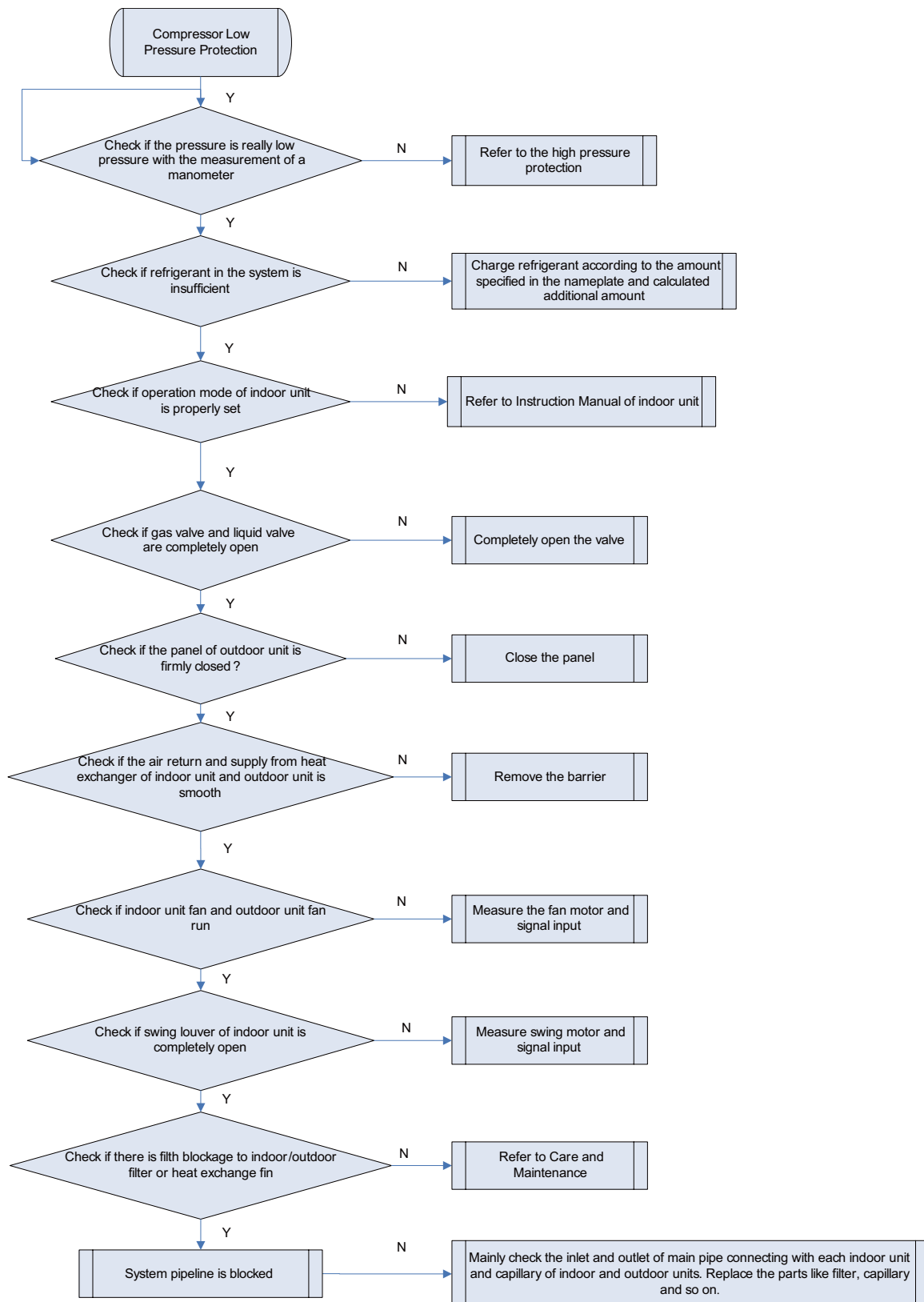
It is advised to start from the simple operations when analyzing, judging and confirming what has caused the malfunction, and then conduct the complicated operations, such as the removal of devices, replacement of parts and charge of refrigerant.

Find out the cause of the malfunction. As several malfunctions may occur at the same time to the unit, so a comprehensive analysis is needed to make the cause found out reliable and authentic.

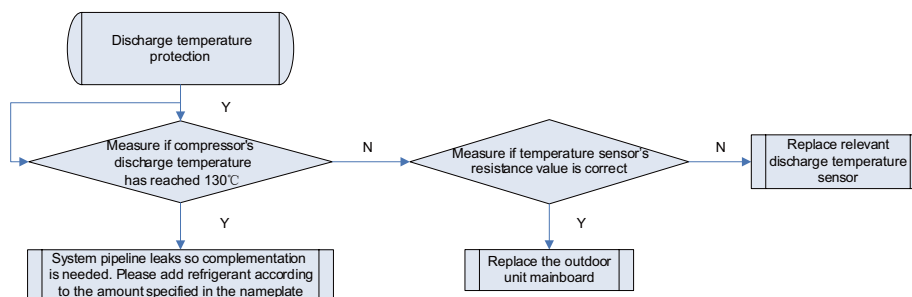
### ◆ Malfunction display: E1 Actuation of high pressure switch



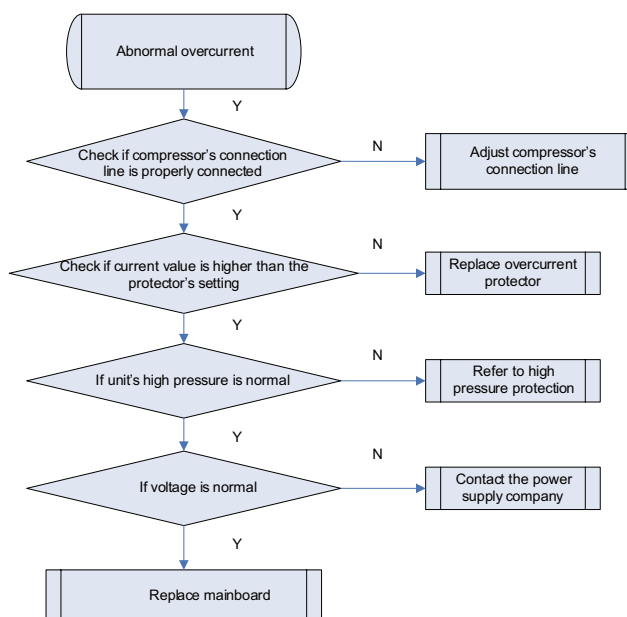
◆ Malfunction display: E3 Actuation of low pressure switch



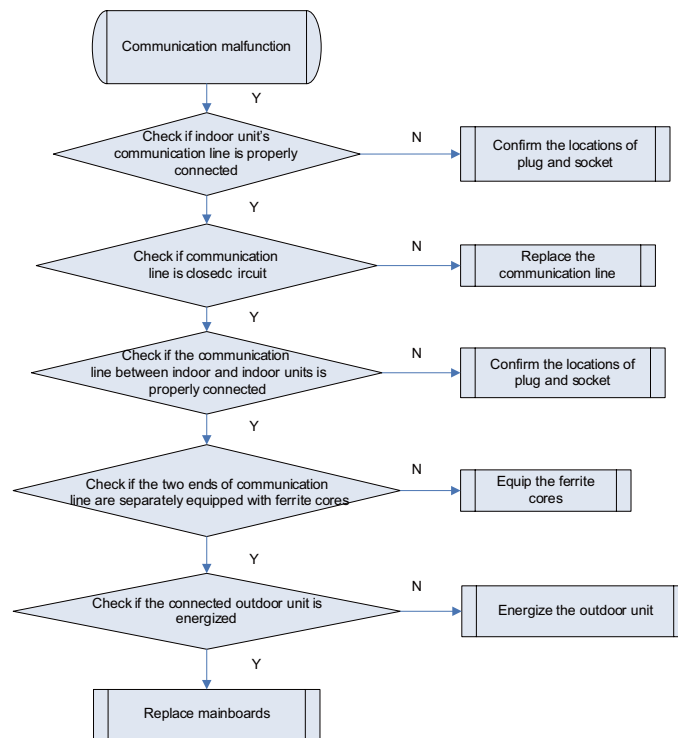
◆ Malfunction display: E4 Abnormal discharge temperature



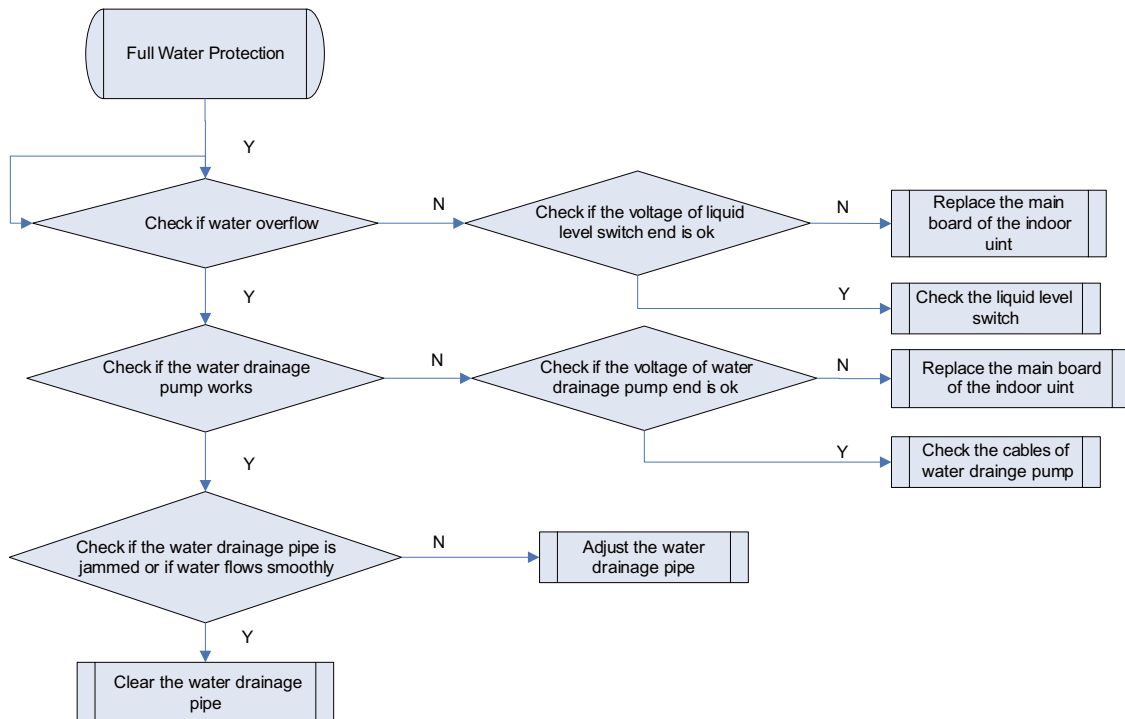
◆ Malfunction display: E5 Compressor Overheat



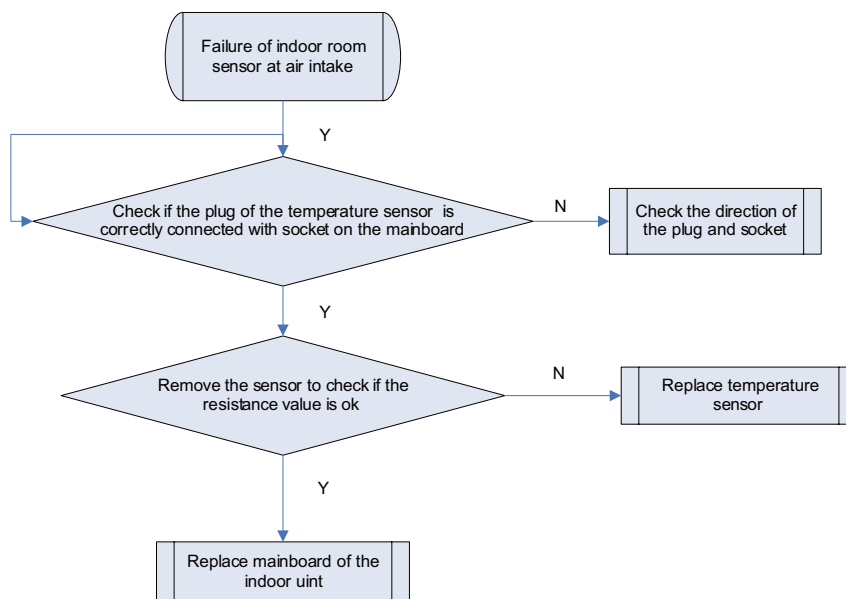
◆ Malfunction display: E6 Communications Failure



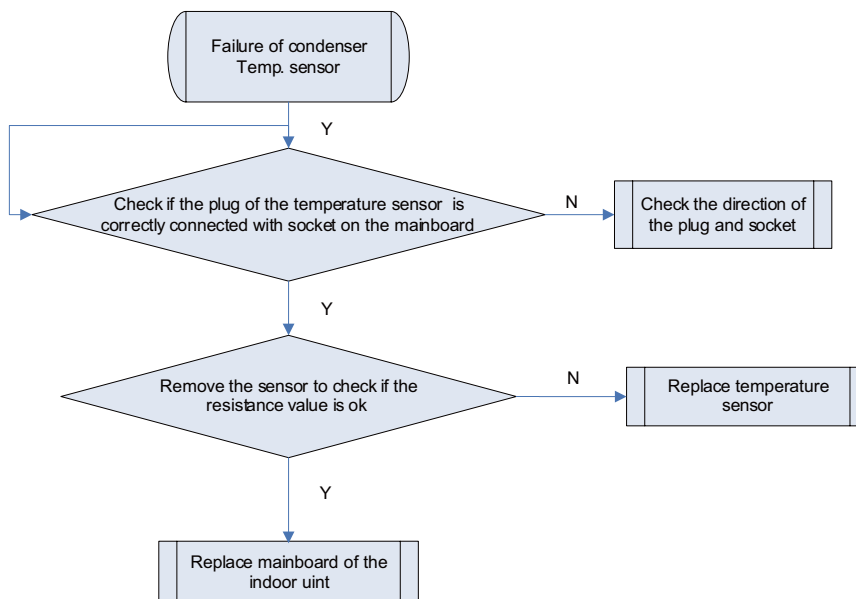
◆ Malfunction display: E9 Malfunction of drain water level



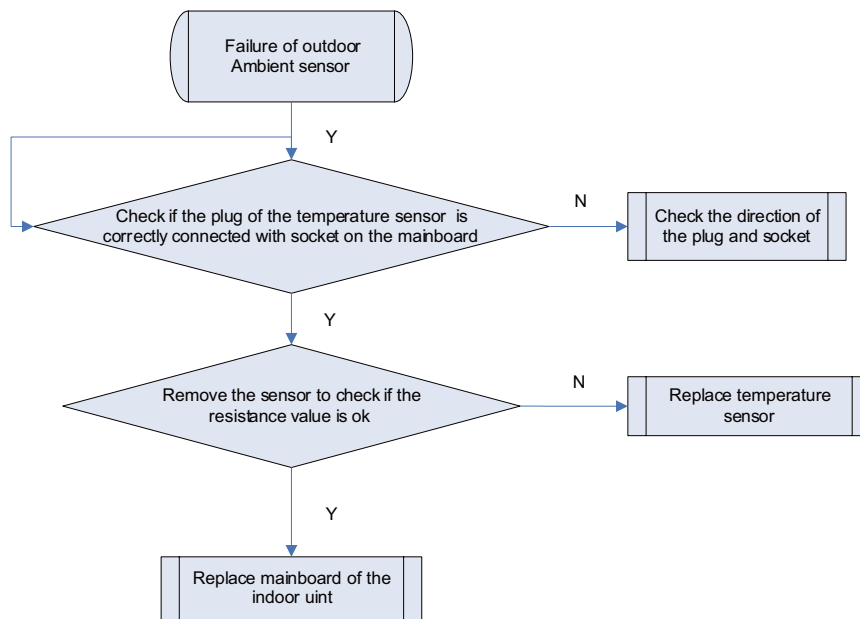
◆ Malfunction display: F0 Malfunction of Indoor Room Thermistor at Air Intake



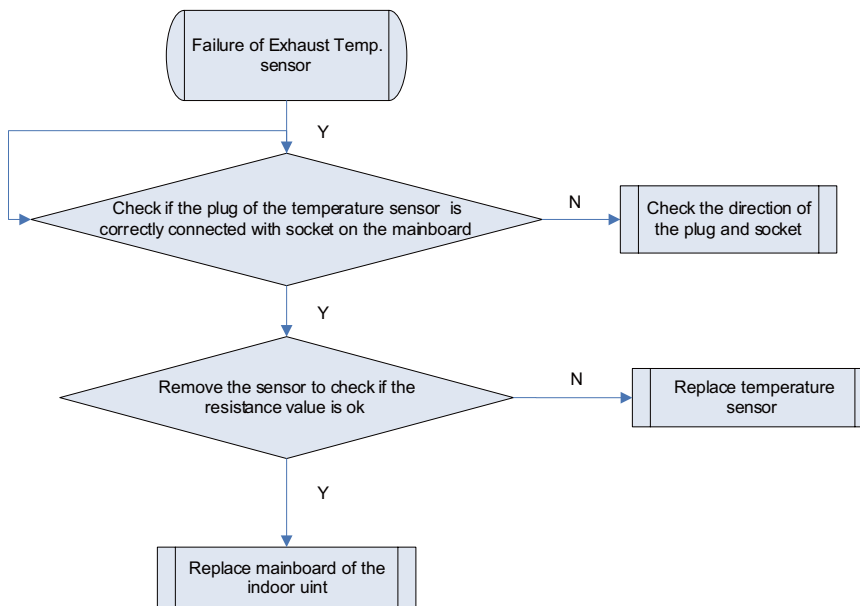
◆ Malfunction display: F1 Malfunction of Evaporator Temp. Thermistor



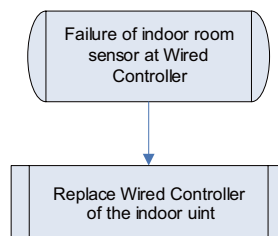
◆ Malfunction display: F3 Malfunction of Outdoor Ambient Thermistor



◆ Malfunction display: F4 Malfunction of Exhaust Temp. Thermistor



◆ Malfunction display: F5 Malfunction of Indoor Room Thermistor at Wired Controller

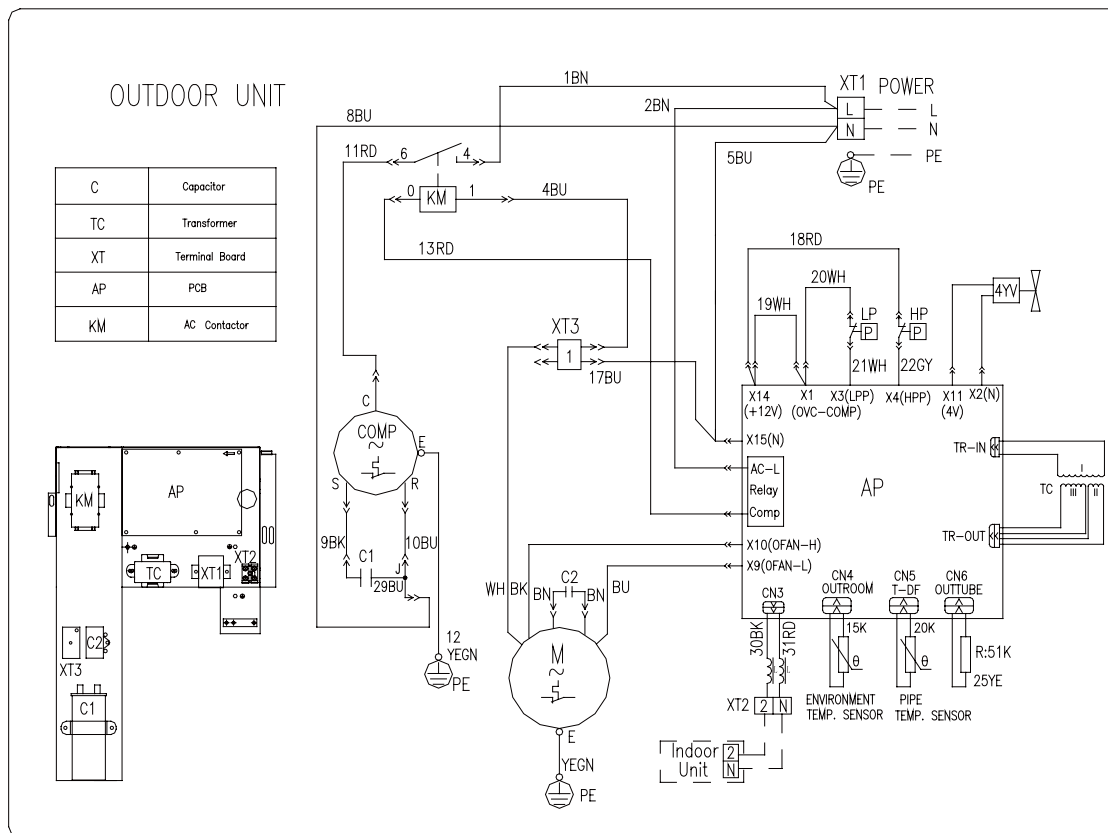




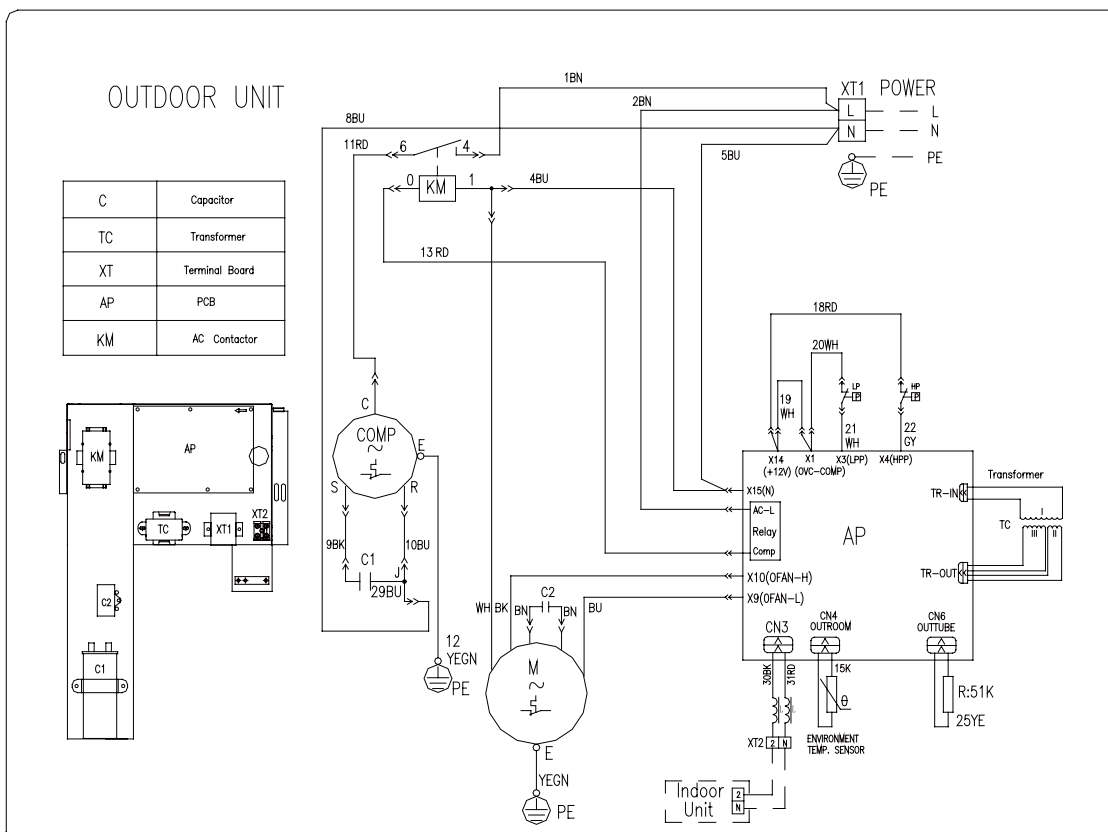
### 3 WIRING DIAGRAM

#### 3.1 Wiring Diagram-Outdoor Units

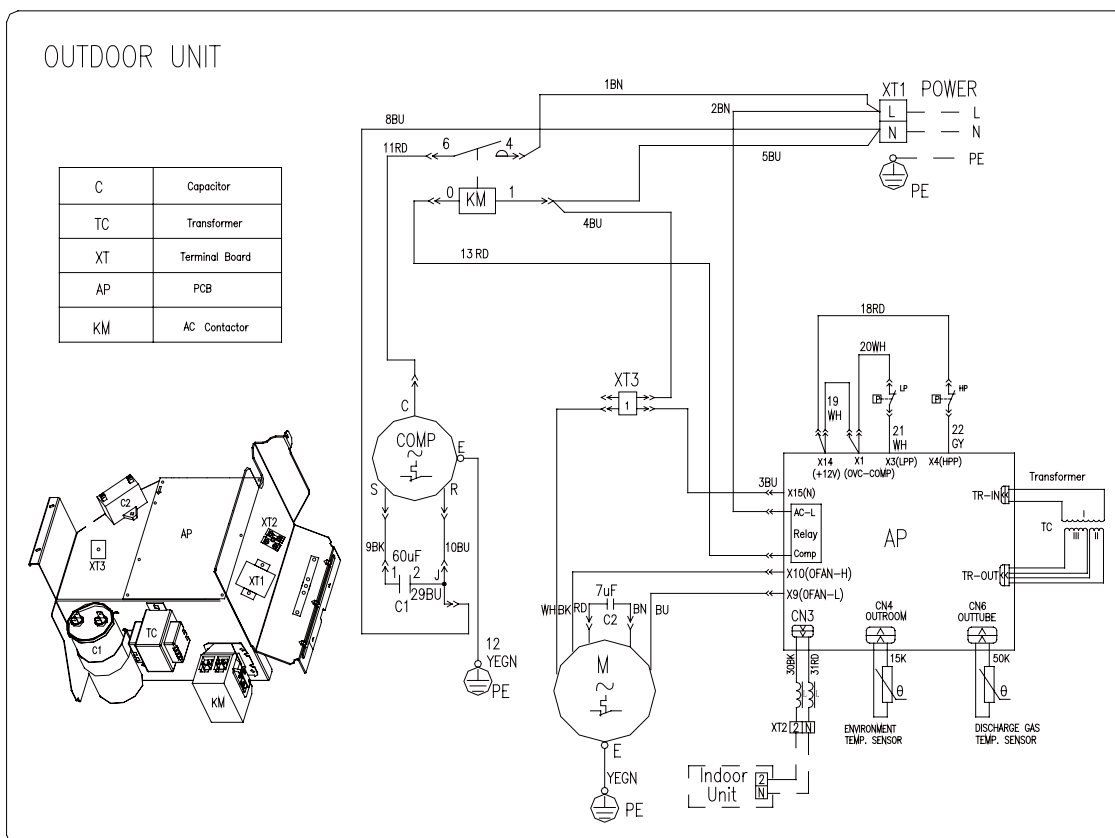
##### (1). GUHN24TK1AO



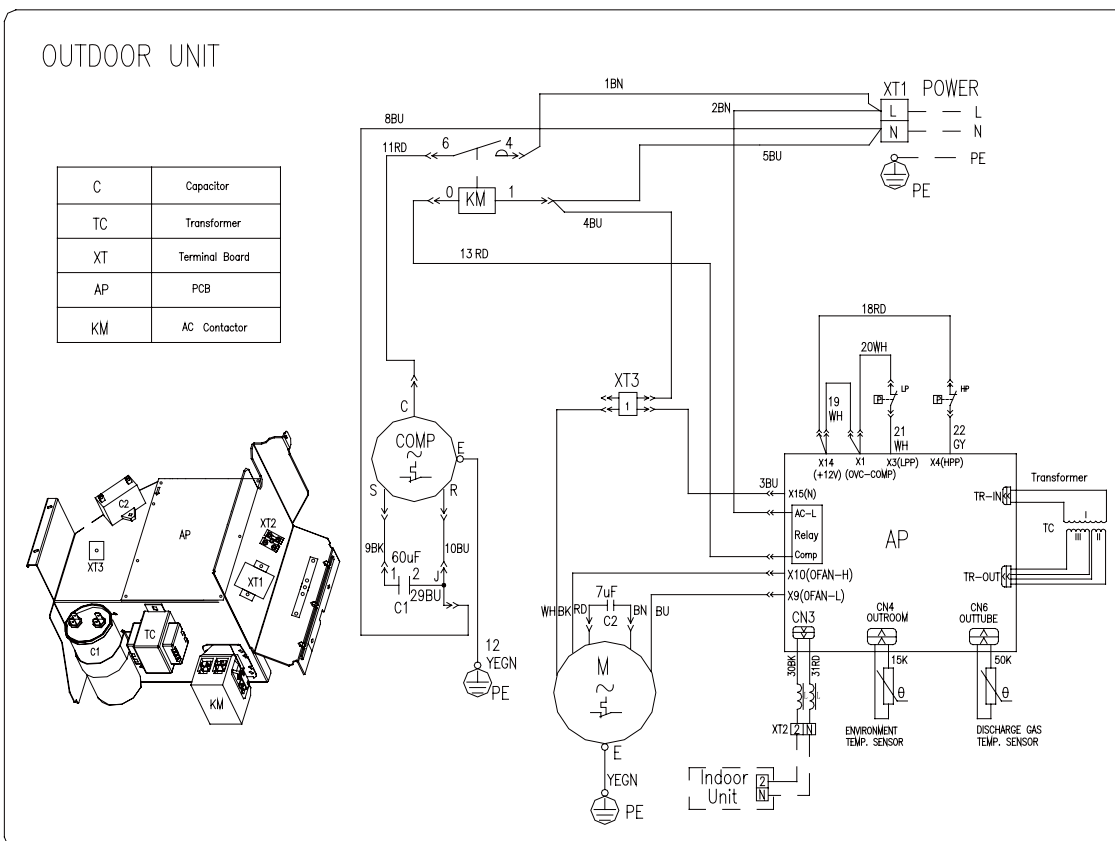
##### (2). GUCN24TK1AO



### (3). GUHN30TK1AO

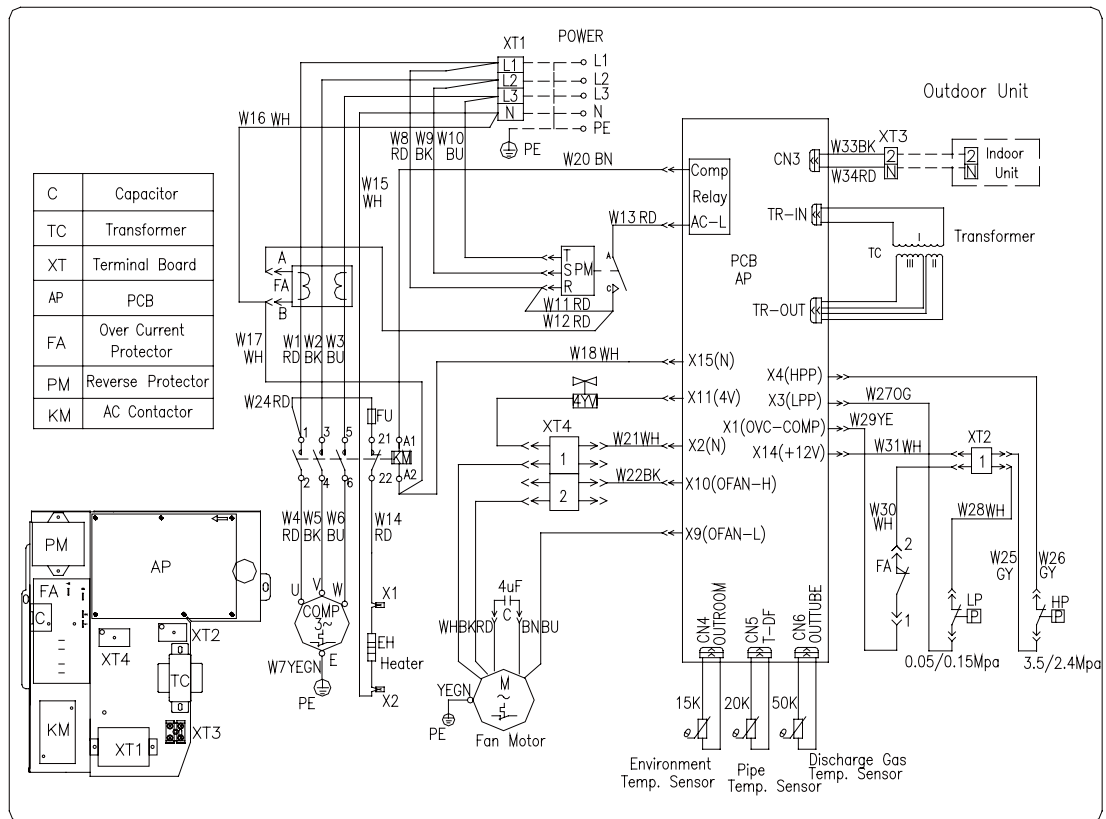


### (4). GUCN30TK1AO

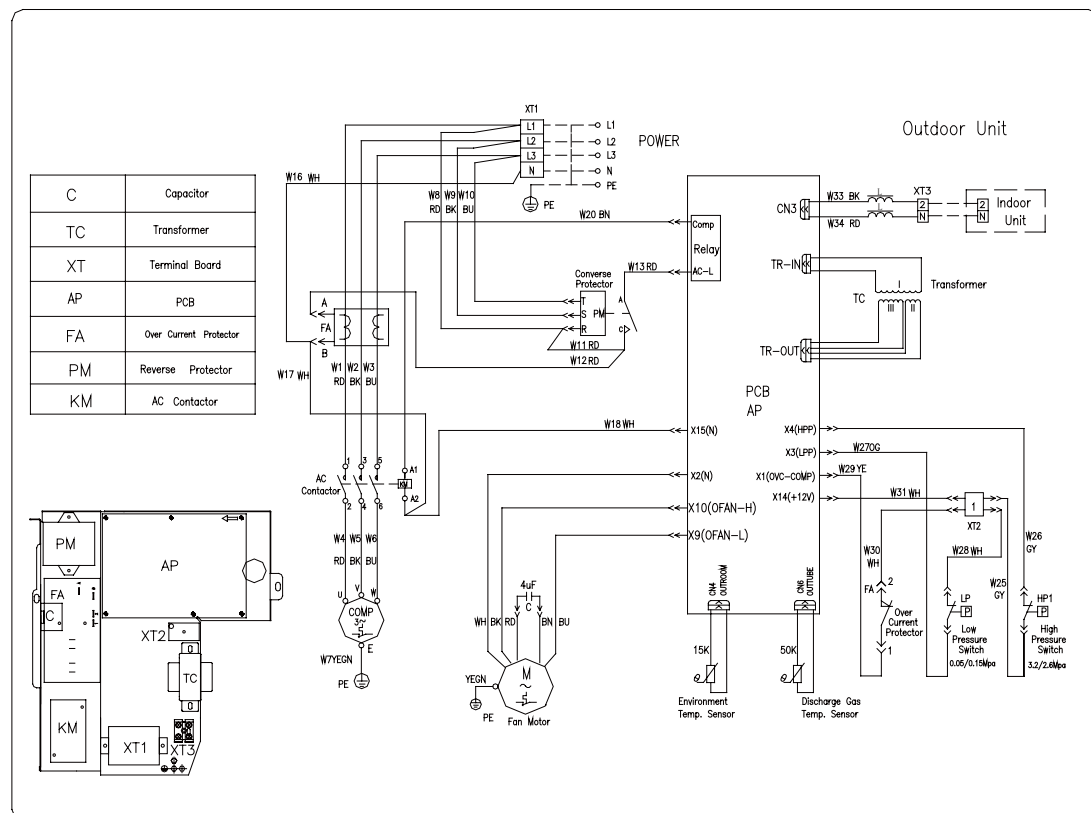




(7). GUHN36TM1AO



(8). GUCN36TM1AO



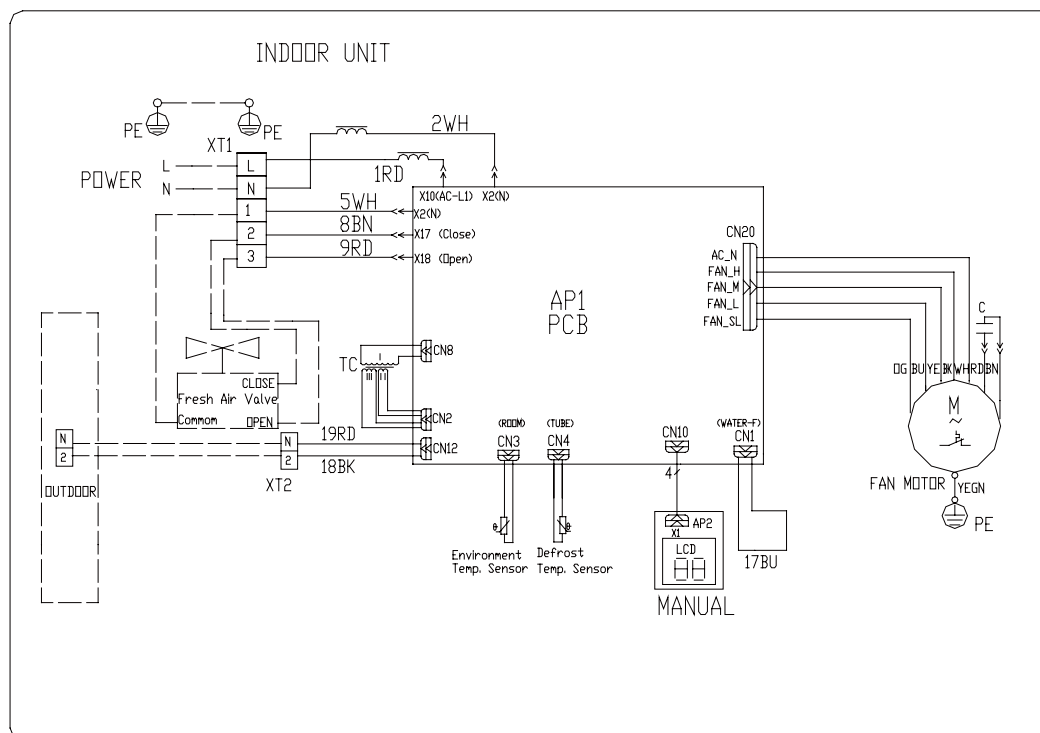




## 3.2 Wiring Diagram-Indoor Units

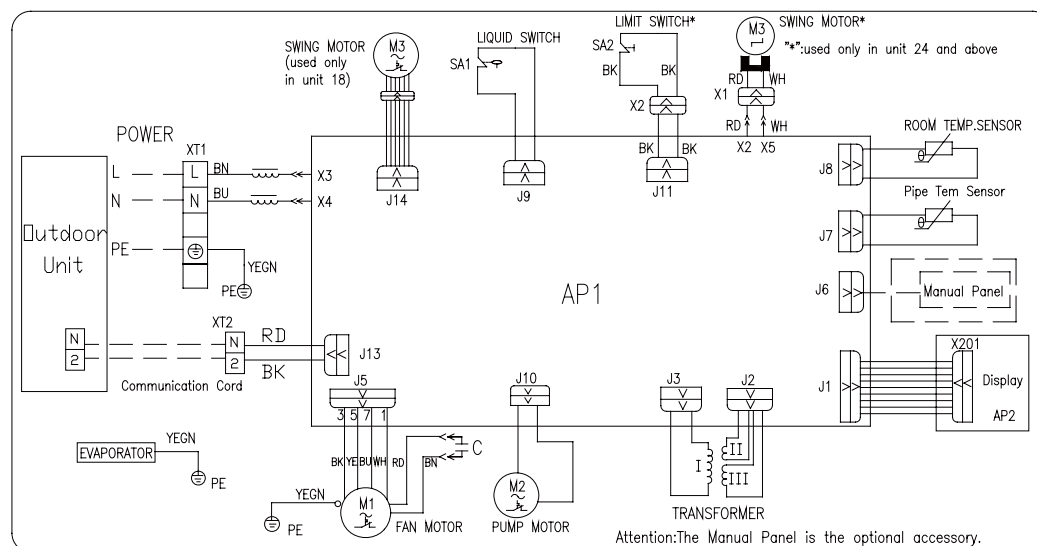
### 3.2.1 Duct Type

Model: GFH24TK1BI; GFH30TK1BI;GFH36TK1BI; GFH42TK1BI;GFH48TK1BI; GFH60TK1BI;

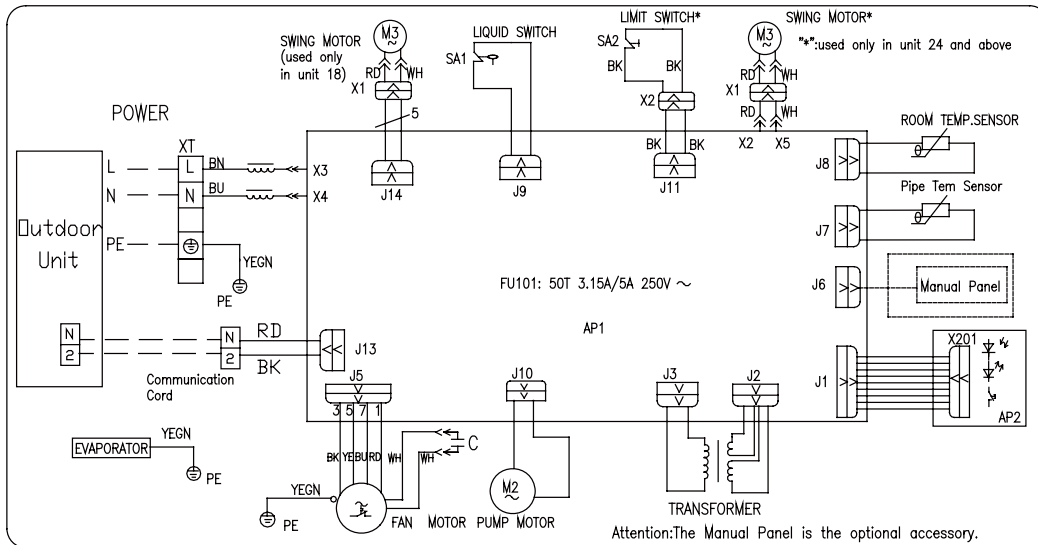


### 3.2.2 Cassette Type

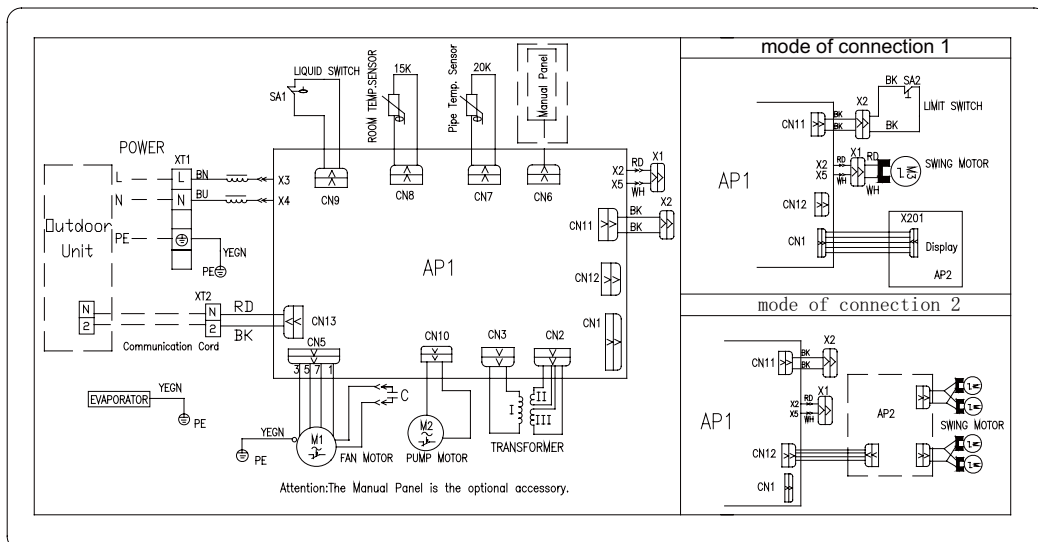
(1). Model: GKH24TK1BI; GKH30TK1BI; GKH42TK1BI



(2). Model:GKH36TK1B1/ GKH48TK1B1;



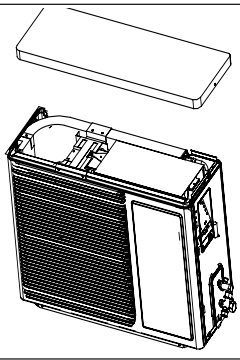
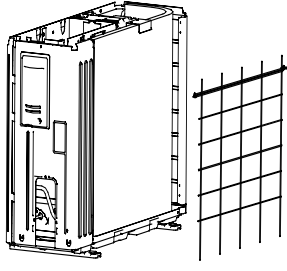
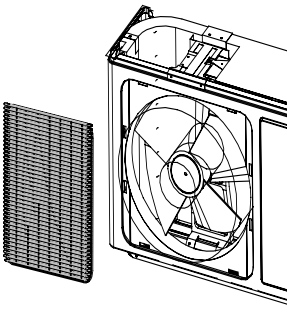
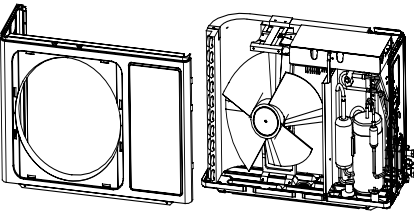
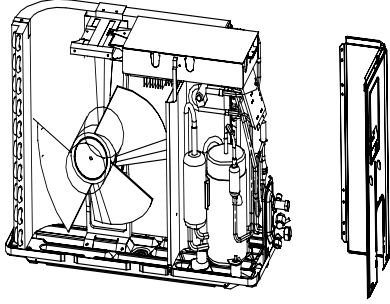
(3). Model:GKH24TK1B2I; GKH30TK1B2I; GKH36TK1B2I; GKH42TK1B2I; GKH48TK1B2I;

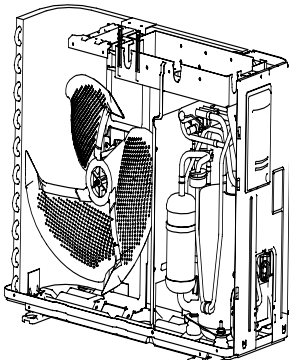
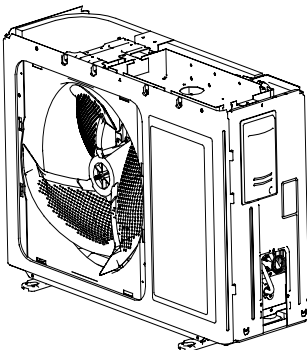
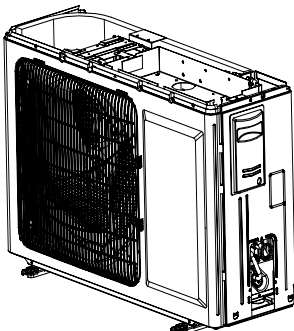
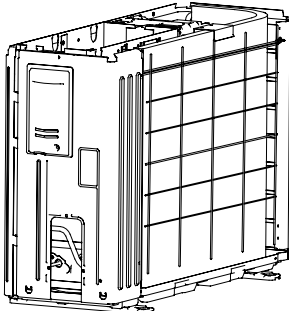
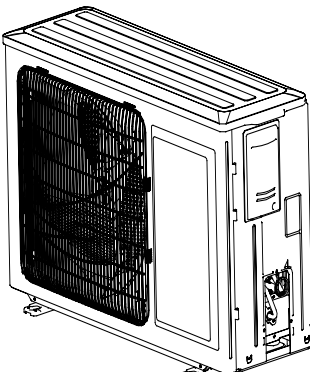


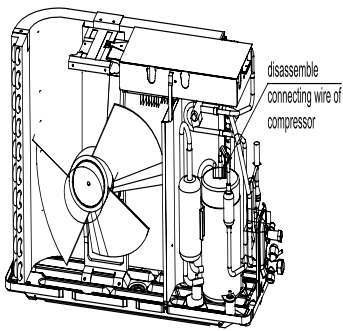
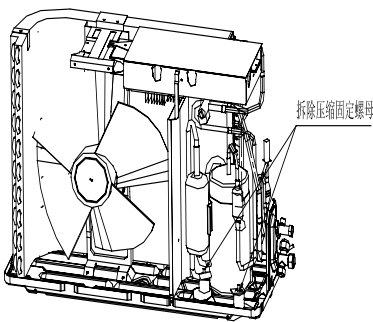
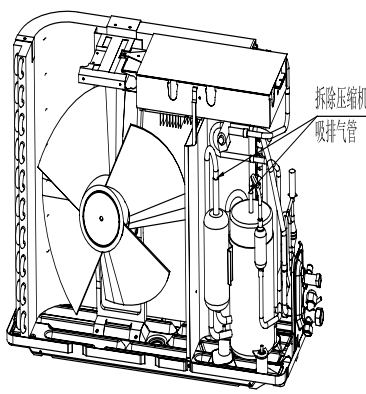
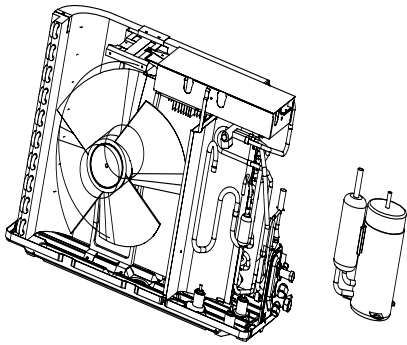


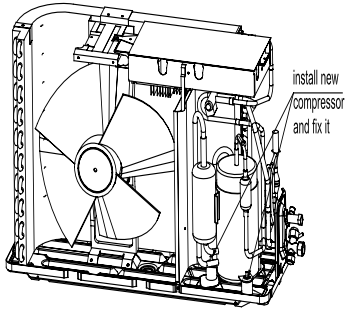
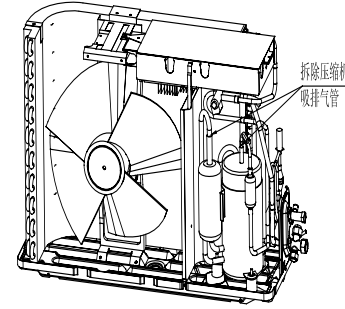
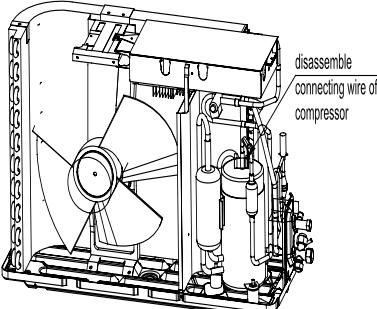
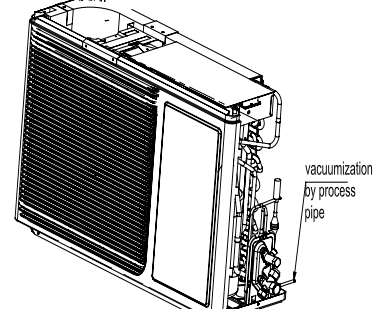
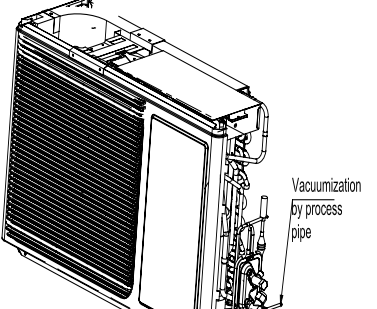
## 4 DISASSEMBLY AND ASSEMBLY PROCEDURE OF MAIN PARTS

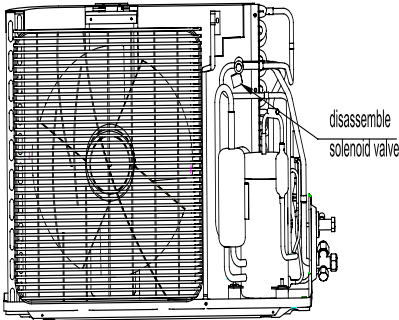
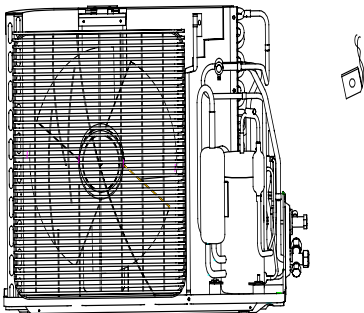
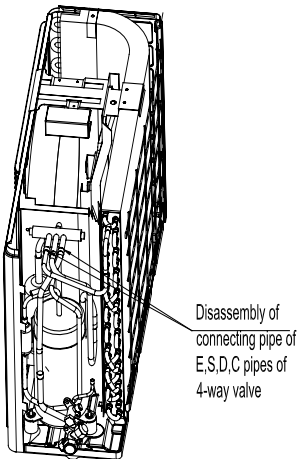
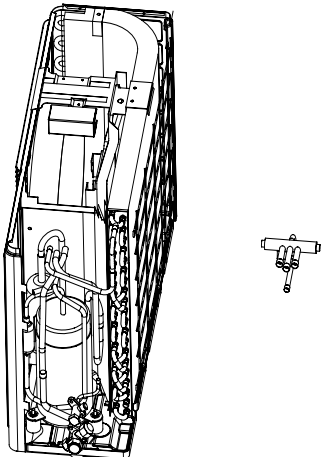
### 4.1 Outdoor Unit

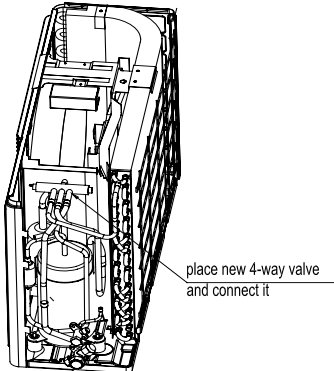
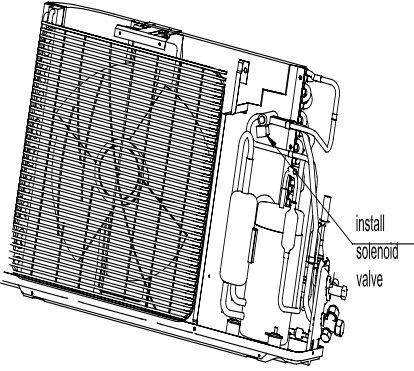
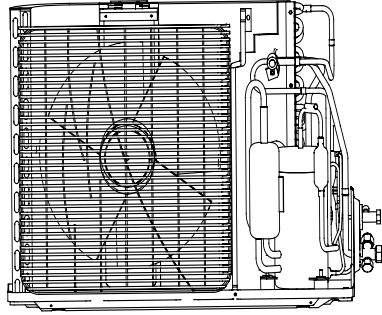
Disassembly and Assembly of external casing		
Remark :Make sure that the power supply is cut off before disassemble of the external casing.		
Step	Illustration	Handling Instruction
1. Disassembly of the top cover		<ul style="list-style-type: none"> <li>• Unscrew retaining screws on top cover</li> <li>• Remove it from the unit.</li> </ul>
2. Disassembly of rear grill		<ul style="list-style-type: none"> <li>• Loose retaining screw on the rear grill with screwdriver.</li> <li>• Remove rear grill from the unit.</li> </ul>
3. Disassembly of front grill		<ul style="list-style-type: none"> <li>• Disassemble the screws of the front grill with screwdriver</li> <li>• Disassemble and remove the front grill from the panel (external casing).</li> </ul>
4. Disassembly of panel (external casing)		<ul style="list-style-type: none"> <li>• Disassemble the retaining screws on the panel (external casing);</li> <li>• Remove the panel (external casing) from the unit.</li> <li>• Some models (R(Y)30PEV1K□R(Y)36PEV1K□R(Y)42PEV1K□R(Y)48TPEV1K)require disassembling the front panel outside the external casing first before removing it.</li> </ul>
5. Disassembly of right (back) panel		<ul style="list-style-type: none"> <li>• Disassemble the screws on the right (back) panel with screwdriver.</li> <li>• Remove the right (back) panel from the unit.</li> </ul>

<p>6. Installation of new right (back) panel</p>		<ul style="list-style-type: none"> <li>• Put new right (back) panel into right position.</li> <li>• Screw down the surrounding retaining screws with screwdriver.</li> </ul>
<p>7. Installation of new panel (external casing)</p>		<ul style="list-style-type: none"> <li>• Put new panel (external casing) into right position on the unit;</li> <li>• Screw down the surrounding retaining screws with screwdriver.</li> <li>• Some models (R(Y)30PEV1K□R(Y)36PEV1K□R(Y)42PEV1K□R(Y)48TPEV1K) need to be equipped with front panel outside the external casing</li> </ul>
<p>8. Installation of front grill</p>		<ul style="list-style-type: none"> <li>• Put new front grill into correct position on the unit</li> <li>• Screw down the surrounding retaining screws with screwdriver.</li> </ul>
<p>9. Installation of new rear grill</p>		<ul style="list-style-type: none"> <li>• Put new rear grill into the right position on the unit</li> <li>• Screw down the surrounding retaining screws with screwdriver.</li> </ul>
<p>10. Installation of new top cover</p>		<ul style="list-style-type: none"> <li>• Put the new top cover into the correct position on the unit</li> <li>• Screw down the surrounding retaining screws with screwdriver</li> </ul>

Disassembly and Assembly of Compressor		
Remark : Make sure there isn't any refrigerant in pipe system and the power supply is cut off before removal of the compressor..		
Step	Illustration	Handling Instruction
1. Disconnect the power cord		<ul style="list-style-type: none"> <li>• Unscrew the retaining screw of power cord with screwdriver.</li> <li>• Unplug the power cord.</li> </ul> <p>Note:Earmark the colour of wire corresponding to the terminal when Removing the wire , and the mixture can be avoided when recovering the wire connection.</p>
2. Disassembly of retaining nuts on compressor		<ul style="list-style-type: none"> <li>• Disassemble the retaining nuts on the compressor with wrench</li> </ul>
3. Dismantle the discharge pipe and the suction pipe of compressor		<ul style="list-style-type: none"> <li>• Heat the suction and discharge pipe with gas welding before removing compressor.</li> <li>• Conduct nitrogen-fill protection when welding and the pressure of nitrogen is <math>0.05 \pm 0.01 \text{ Mpa}</math> ( relative pressure)</li> <li>• Heating with caution in case the surroundings get burning due to high temperature.</li> </ul>
4. Remove compressor		<ul style="list-style-type: none"> <li>• Remove compressor from chassis.</li> </ul>

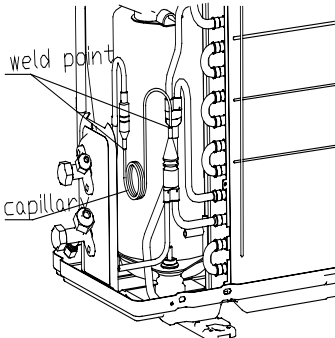
<p>5. Fix the new compressor on base plate</p>		<ul style="list-style-type: none"> <li>• Position accurately the new compressor.</li> <li>• Screw down fixing nuts for compressor with wrench.</li> <li>• Do not put the compressor upside down during assembly.</li> </ul>
<p>6. Connection of suction and discharge pipe with pipeline system</p>		<ul style="list-style-type: none"> <li>• Heat the suction and discharge pipe with gas welding before removing compressor.</li> <li>• Provide nitrogen protection during gas welding and the nitrogen pressure should be 0.05±0.01Mpa (relative pressure)</li> <li>• Please pay attention to heating in case that surrounding materials should be burnt by high temperature.</li> </ul>
<p>7. Connection power supply wires of compressor</p>		<ul style="list-style-type: none"> <li>• Assemble the power supply wires onto right position according to the order of disassembly.</li> <li>• Screw down the retaining screw for the power supply wires with screwdriver.</li> </ul>
<p>8. Vacuumization by fluorin-feeding nozzle</p>		<ul style="list-style-type: none"> <li>• Vacuumize the system by fluorin-feeding nozzle</li> </ul>
<p>9. Recharge refrigerants by fluorin-feeding nozzle</p>		<ul style="list-style-type: none"> <li>• Recharge refrigerants to the system by fluorin-feeding nozzle</li> <li>• Volume of the charged refrigerant should be in accordance with the requirement on the unit nameplate.</li> </ul>

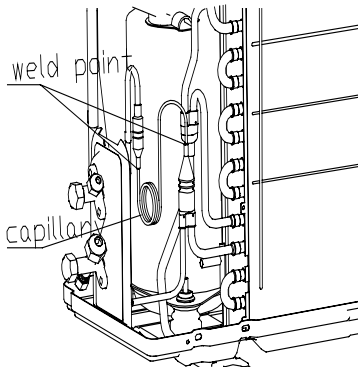
Disassembly and Assembly of 4-way valve		
Remark : Make sure that there isn't any refrigerant in pipe system and the power supply is cut off before removal of 4-way valve.		
Step	Illustration	Handling Instruction
1. Disassembly of solenoid valve		<ul style="list-style-type: none"> <li>• Cut off power supply and reclaim refrigerants properly.</li> <li>• Disassemble solenoid valve with wrench</li> </ul>
2. Removal of solenoid valve		<ul style="list-style-type: none"> <li>• Remove the solenoid valve from 4-way valve.</li> </ul>
3. Disassembly of 4-way valve		<ul style="list-style-type: none"> <li>• Heat connection pipes for 4 pipes of 4-way valve with gas welding before removal of 4-way valve.</li> <li>• Record the direction of the 4-way valve and installation position of each pipe before welding away 4-way valve.</li> </ul>
4. Removal of 4-way valve		<ul style="list-style-type: none"> <li>• Remove the old 4-way valve from the pipe line.</li> </ul>

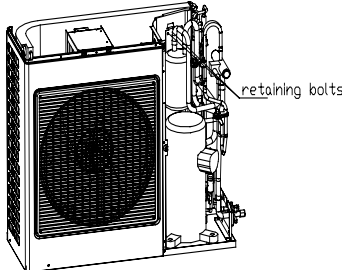
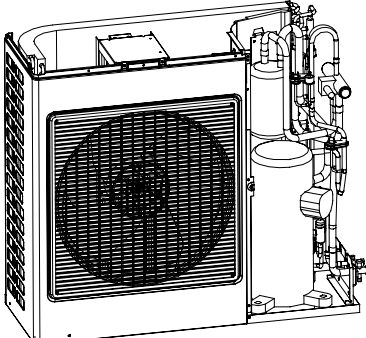
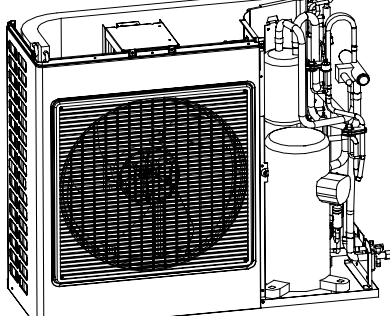
<p>5. Installation of New 4-way valve</p>		<ul style="list-style-type: none"> <li>• Position accurately the new 4-way valve.</li> <li>• Connect new 4-way valve with pipe line.</li> <li>• Wrap the valve with wet cloth when welding 4-way valve in case sliding block inside the valve should be burnt and water flow into the pipe line.</li> <li>• Welding is done by nitrogen and the nitrogen pressure shall be <math>0.05 \pm 0.01 \text{ Mpa}</math> (relative pressure).</li> </ul>
<p>6. Assembly of solenoid valve</p>		<ul style="list-style-type: none"> <li>• Assemble solenoid valve onto the new 4-way valve in order of disassembly.</li> </ul>
<p>7. Examination of System and refrigerant charge</p>		<ul style="list-style-type: none"> <li>• Vacuum and charge the refrigerant pipe after the system passes the leak test. if the system leak test passes.</li> </ul>

#### Disassembly and Assembly of capillary

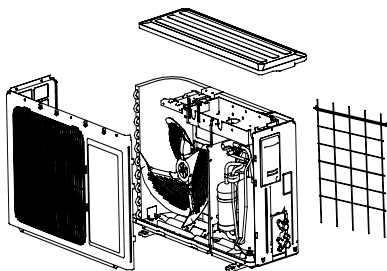
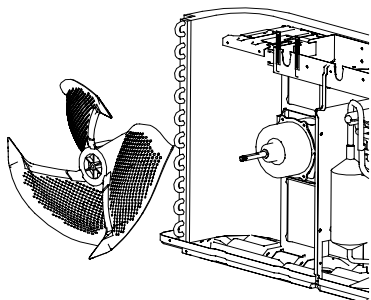
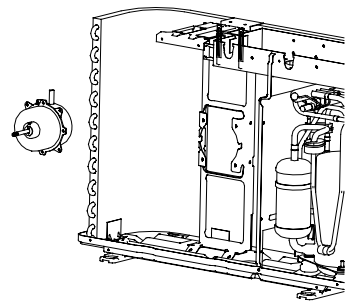
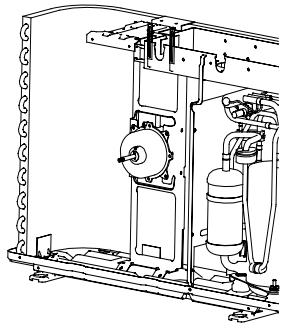
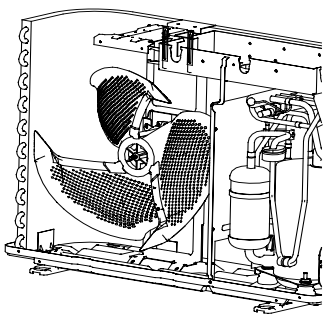
Remark : Make sure that there isn't any refrigerant in pipe system and the power supply is cut off before removal of the capillary

Step	Illustration	Handling Instruction
<p>1. Disassembly of Capillary</p>		<ul style="list-style-type: none"> <li>• Weld two welding points connecting capillary with other pipe lines.</li> <li>• Remove capillary.</li> </ul>

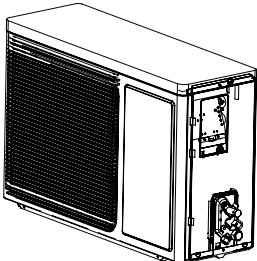
<p>2. Assembly of New capillary</p>		<ul style="list-style-type: none"> <li>• Install new capillary.</li> <li>• Weld the points connected with other pipe lines.</li> <li>• Re-conduct the system leak test. Pump vacuum and fill the refrigerants.</li> </ul>
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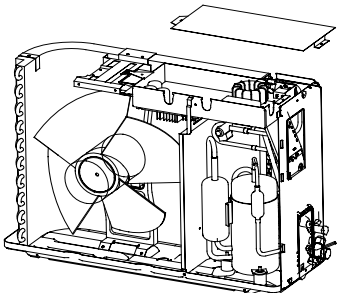
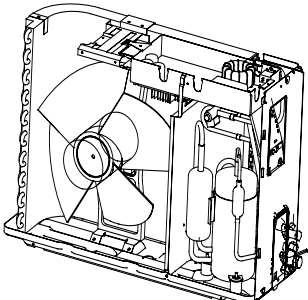
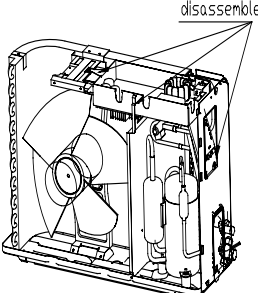
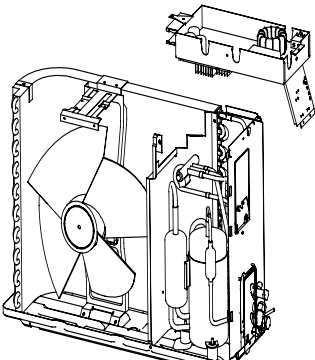
Disassembly and Assembly of Vapour Liquid Separator		
Remark : Make sure that there isn't any refrigerant in pipe system and the power supply is cut off before removal of the vapor liquid separator. (the following steps are not applicable for the models with the capacity lower than 24kBtu/h.)		
Step	Illustration	Handling Instruction
<p>1. Disassembly of retaining bolts for liquid reservoir</p>		<ul style="list-style-type: none"> <li>• Disassemble the retaining screws on the pothooks of the reservoir with screwdriver.</li> </ul>
<p>2. Disassembly of vapor liquid separator</p>		<ul style="list-style-type: none"> <li>• Weld open two pipes connecting vapor liquid separator with pipe line with gas welding.</li> <li>• Remove vapor liquid separator.</li> </ul>
<p>3. Installation of new vapor liquid separator</p>		<ul style="list-style-type: none"> <li>• Position accurately new vapor liquid separator.</li> <li>• Connect new vapor liquid separator with pipe line by gas welding</li> <li>• screw down the retaining bolts on pothook.</li> </ul>

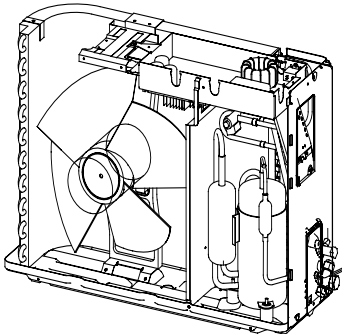
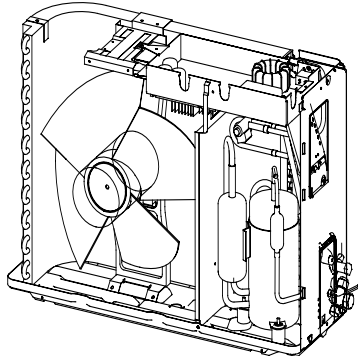
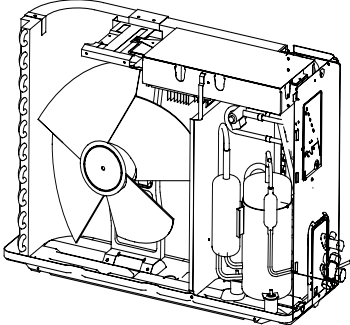


Disassembly and Assembly of Axial Flow Fan and motor		
Remark : Make sure that power supply of the unit is cut down before removal of axial flow fan and motor.		
Step	Illustration	Handling Instruction
1. Disassembly of outdoor parts		<ul style="list-style-type: none"> <li>Disassemble outdoor parts of unit top cover, panel(external casing), screen,etc. according to the discription above in order to disassemble axial flow fan and motor conveniently.</li> </ul>
2. Disassembly of axial flow fan		<ul style="list-style-type: none"> <li>Hold the fans without movement.</li> <li>Disasseml e retaining nuts for the fans with wrench.</li> <li>Take down and remove fans from motor.</li> </ul>
3. Disassembly of fan motor		<ul style="list-style-type: none"> <li>Open the cover plate of electric box</li> <li>Loose the connecting plug for motor wires and pull out the wires through the hole</li> <li>Disassemble retaining screws for motor support and remove the motor</li> </ul>
4. Installation of new motor		<ul style="list-style-type: none"> <li>Position accurately the new motor on the motor support.</li> <li>Screw down the retaining screw for motor.</li> <li>Connect the motor wire through the hole with the corresponding position inside the electrical parts box and fasten the connecting plug.</li> <li>Cover the cover plate of electric box and screw it down by bolts.</li> </ul>
5. Assembly of new axial flow fan		<ul style="list-style-type: none"> <li>Position reliably the new fan on the motor axis</li> <li>Hold the fans without movement.</li> <li>Screw down retaining screws for fan with wrench.</li> </ul>



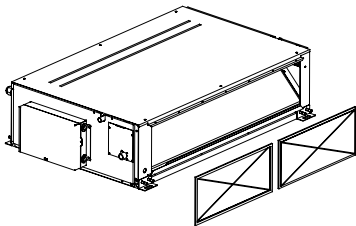
6. Assembly of outdoor parts		<ul style="list-style-type: none"> <li>• Re-assemble the outdoor parts of unit top cover, panel (external casing) and rear grill, etc. according to the discription above.</li> </ul>
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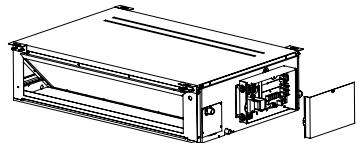
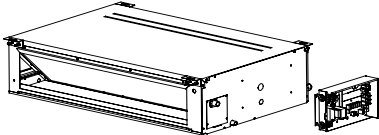
Disassembly and Assembly of electrical parts box		
Remark : Make sure that power supply of the unit is cut down before removal of electrical parts box or electrical parts box modules.		
Step	Illustration	Handling Instruction
1. Disaassembly of cover of electrical box.		<ul style="list-style-type: none"> <li>• Cut off power supply</li> <li>• Disassemble retaining screws between cover and electric box</li> <li>• Remove the cover.</li> </ul>
2. Pull away the power supply wires for components like motor, etc.		<ul style="list-style-type: none"> <li>• Disassemble electrical components, like mainboard inside the electrical parts box connected with outdoor componets (power-loaded wires for componets like compressor, motor).</li> </ul> <p>Attention: Record right position for wire connection during disassembly of connecting wires.</p>
3. Disaassembly of sub-assy of electrical box.	 disassemble retaining screws	<ul style="list-style-type: none"> <li>• Disassemble retaining screws between electrical parts box and middle clasp, motor support as well as right panel with screwdriver.</li> </ul>
4. Removal of sub-assy of electrical box		<ul style="list-style-type: none"> <li>• Hold and remove them upward to disconnect them with middle partition</li> <li>• Remove sub-assy of electric box.</li> </ul>

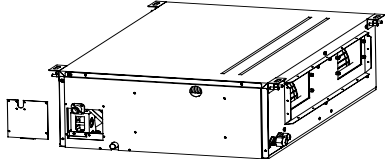
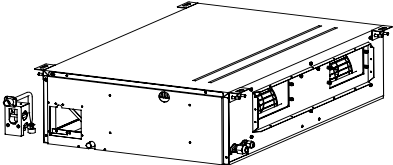
<p>5. Install new sub-assy of electric box</p>		<ul style="list-style-type: none"> <li>• Position accurately the new sub-assy of electrical box.</li> <li>• Re-fasten the sub-assy of electrical box and screw down with screwdriver</li> </ul>
<p>6. Connection of power supply wires of each component</p>		<ul style="list-style-type: none"> <li>• Re-connect the connection wires of components with right position according to the order of disassembly.</li> </ul>
<p>7. Install cover of electric box</p>		<ul style="list-style-type: none"> <li>• Position accurately the new cover of electrical box.</li> <li>• Re-fasten and screw down retaining screws with screwdriver</li> </ul>

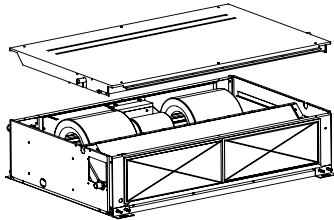
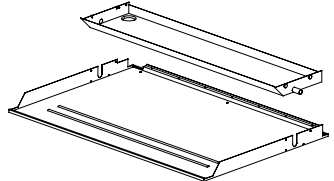
## 4.2 Indoor Unit

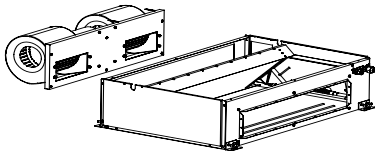
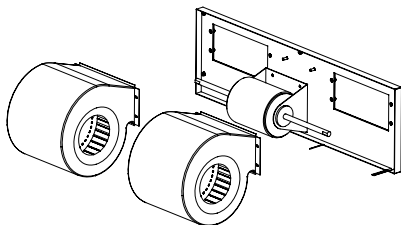
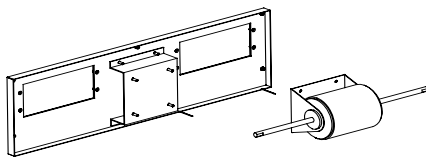
### 4.2.1 Duct Type

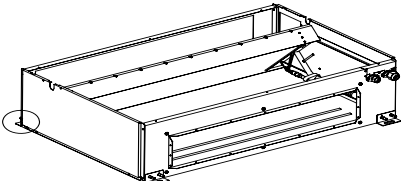
Disassembly of filter screen for return air		
Remark: Make sure that the power supply is cut off before disassembling and protect all parts during disassembly. Do not put filter screen near the high temperature heat source		
Step	Illustration	Handling Instruction
Disassembly of filter screen for return air		<ul style="list-style-type: none"> <li>Compress the filter screen for return air down on the guide slot sponge, and remove according to the direction shown by the arrow. There are 2 filter screen for return air</li> </ul>

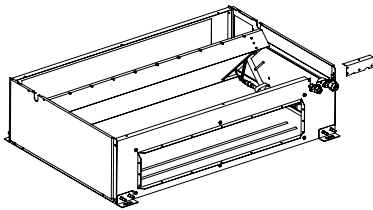
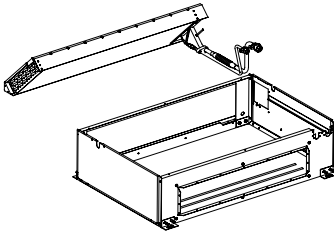
Disassembly of electrical box cover panel and electrical box		
Remark: Make sure that the power supply is cut off before disassembling and protect all parts during disassembly, especially the electrical components. Do not dampen or hit them		
Step	Illustration	Handling Instruction
1. Disassembly of electric box cover		<ul style="list-style-type: none"> <li>Unscrew the retaining screws on the cover of the electrical box.</li> <li>Remove the cover of the electrical box away.</li> </ul>
2. Disassembly of electric box		<ul style="list-style-type: none"> <li>Remove away the power lines of the electrical components inside the electrical box, such as motor, etc. Notes: record the accurate position of each line before the removal.</li> <li>Unscrew the retaining screws between the electrical box casing and the side plate.</li> <li>Remove the components inside the electrical box away.</li> </ul>

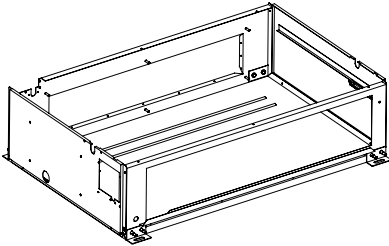
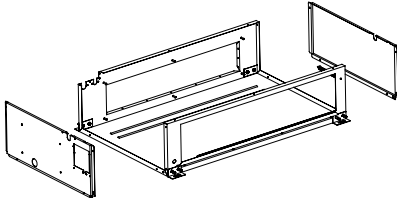
Disassembly of drainage pump		
Remark: Make sure that the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
1. Removal of the Guard Plate of the Water Pump		<ul style="list-style-type: none"> <li>Unscrew the retaining screws between the guard board, the side plate and the draining pipe of the water pump.</li> <li>Remove the electrical box away.</li> </ul>
2. Removal of the Parts of the Water Pump		<ul style="list-style-type: none"> <li>Unscrew the retaining screws between the parts of the water pump and the water receiving tray.</li> <li>Remove the parts of the water pump away.</li> </ul>

Disassembly of water-containing plate		
Remark: Make sure that the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
1. Removal of the Cover Plate		<ul style="list-style-type: none"> <li>• Unscrew the retaining screws between the lower and upper cover plates.</li> <li>• Remove the lower cover plate together with the water receiving tray away from the unit.</li> </ul>
2. Removal of the Water Receiving Tray		<ul style="list-style-type: none"> <li>• Unscrew the retaining screws between the water receiving tray and the cover plate.</li> <li>• Remove the water receiving tray from the lower cover plate.</li> </ul>


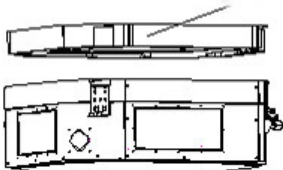
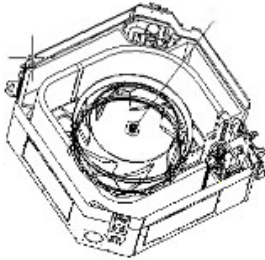
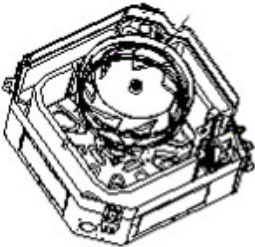
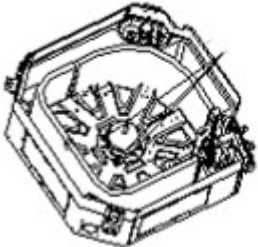
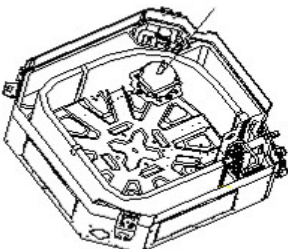
Disassembly of fan and motor		
Remark: Make sure that the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
1. Removal of the Parts of the Fan		<ul style="list-style-type: none"> <li>• Unscrew the retaining screws between the components of the fan and the cover plate.</li> <li>• Remove the whole fan away from the unit.</li> </ul>
2. Disassembly of fan		<ul style="list-style-type: none"> <li>• Unscrew the retaining screws between the fan and the supporting plate.</li> <li>• Unscrew the retaining screws between the fan and the motor shaft.</li> <li>• Remove the fan away from the supporting plate.</li> </ul>
3. Disassembly of motor		<ul style="list-style-type: none"> <li>• Unscrew the retaining screws between the motor and the supporting plate.</li> <li>• Remove the motor away from the supporting plate.</li> </ul>

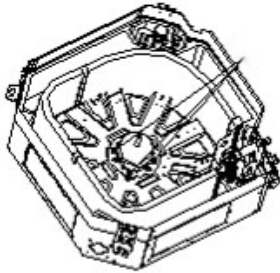
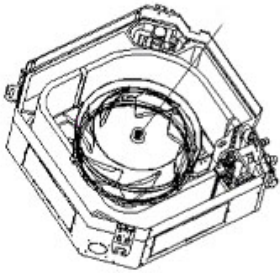
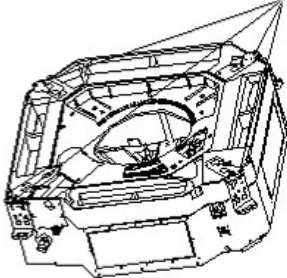
Disassembly of evaporator		
Remark: Make sure that the power supply is cut off and protect the copper tube and aluminum fin. If the time for disassembly shall be long, put the copper tube under pressurized condition.		
Step	Illustration	Handling Instruction
1. Removal of the Retaining Screws between the Evaporator and the Side Plate		<ul style="list-style-type: none"> <li>• Unscrew the retaining screws between the evaporator and the side plate. ( see the circle shown in the left Illustration; both sides are Symmetrical)</li> </ul>

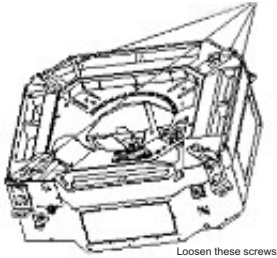
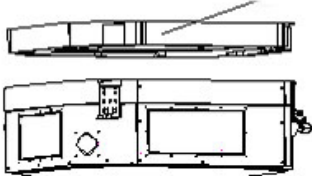

2. Removal of the Valve Guard		<ul style="list-style-type: none"> <li>• Unscrew the retaining screws between the valve guard and the side plate.</li> <li>• Remove away the guard board from the cover.</li> </ul>
3. Removal of evaporator		<ul style="list-style-type: none"> <li>• Remove away the whole evaporator from the unit.</li> </ul>

Disassembly of External casing cabinet		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
1. Disassembly of the screws on the cover plates		<ul style="list-style-type: none"> <li>• Remove the screws between right and left panels and upper cover plates.</li> </ul>
2. Disassembly of the external casing cabinet		<ul style="list-style-type: none"> <li>• Remove right and left panels. Disassembled the external casing cabinet is shown in the illustration.</li> </ul>

## 4.2.2 Cassette-type Unit Cassette-type Unit

Removal and Assembly of Fan Motor		
Step	Illustration	Handling Instruction
1. Loosen the screws fixing the water tray		<ul style="list-style-type: none"> <li>• Use screwdriver to loosen the screws fixing the water tray</li> </ul>
2. Remove the water tray		<ul style="list-style-type: none"> <li>• Remove the water tray</li> </ul>
3. Loosen the bolts fixing the fan		<ul style="list-style-type: none"> <li>• Use spanner to loosen the bolts fixing the fan.</li> </ul>
4. Remove the fan		<ul style="list-style-type: none"> <li>• Remove the fan</li> </ul>
5. Loosen the screws fixing the motor		<ul style="list-style-type: none"> <li>• Use screwdriver to loosen the screws fixing the motor</li> </ul>
6. Remove the motor and replace it		<ul style="list-style-type: none"> <li>• Remove the motor and replace it</li> </ul>

Removal and Assembly		
Step	Illustration	Handling Instruction
7. Tighten the screws fixing the motor		<ul style="list-style-type: none"> <li>Use screwdriver to tighten the screws fixing the motor.</li> </ul>
8. Mount the fan and tighten the fixing bolts		<ul style="list-style-type: none"> <li>Mount the fan and use spanner to tighten the bolts fixing the fan.</li> </ul>
9. Mount the water tray and tighten the screws		<ul style="list-style-type: none"> <li>Use screwdriver to loosen the screws fixing the water tray</li> </ul>

Removal and Installation of Drainage Pump		
Step	Illustration	Handling Instruction
1. Loosen the screws fixing the water tray	 Loosen these screws	<ul style="list-style-type: none"> <li>Use screwdriver to loosen the screws fixing the water tray</li> </ul>
2. Remove the water tray		<ul style="list-style-type: none"> <li>Remove the water pump and replace it.</li> </ul>
3. Pull out the water outlet pipe and loosen the screws fixing the water pump.		<ul style="list-style-type: none"> <li>Pull out the water outlet pipe and use screwdriver to loosen the screws fixing the water pump.</li> </ul>

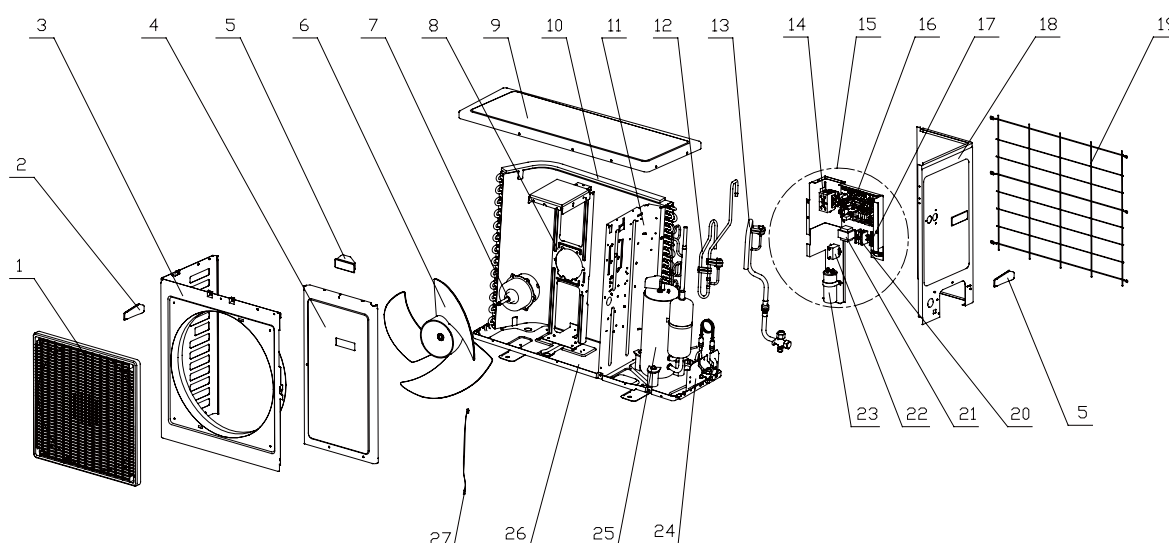


## 5 EXPLODED VIEWS AND PART LIST

### 5.1 Outdoor Unit

Model: GUCN24TK1AO;

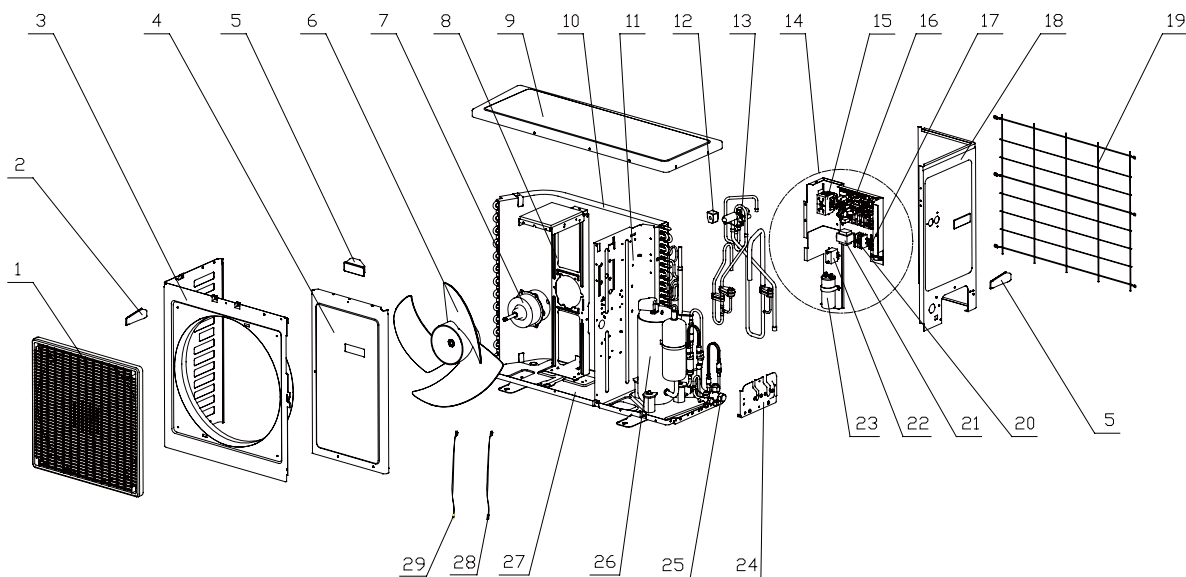
Exploded Views



No..	Name of part	GUCN24TK1AO	
		Product Code	CF021W1401
		Part code	Quantity
1	Front grill	'22414102	1
2	left handle	'26235401	1
3	Cabinet	'01433017P	1
4	Front Side Plate	'01303309P	1
5	Handle	'26235253	1
6	Axial Flow Fan	'10335253	1
7	Fan Motor	'150154512	1
8	Motor Support Sub-Assy	'01705103	1
9	Top Cover	'01255013P	1
10	Condenser Assy	'01125380	1
11	Mid-clapboard sub-assy	'01233024	1
12	Discharge Tube Sub-Assy	'04635446	1
13	Inhalation Tube Sub-Assy	'04675438	1
14	AC Contactor	'44010222	1
15	Electrical Box Assy	'01395831	1
16	Main Board	'30224057	1
17	Terminal Board	'420101851	1
18	Rear Side Plate Sub-Assy	'01303271P	1
19	Rear Grill	'01473028	1
20	Terminal Board	'420111451	1
21	Transformer	'43110233	1
22	Capacitor CBB61	'33010013	1
23	Capacitor CBB65	'33000039	1
24	Valve Support Sub-Assy	'01715001	1
25	Compressor and fittings	'00103077	1
26	Base Plate Sub-Assy	'01195308P	1
27	Sensor	'390002063G	1

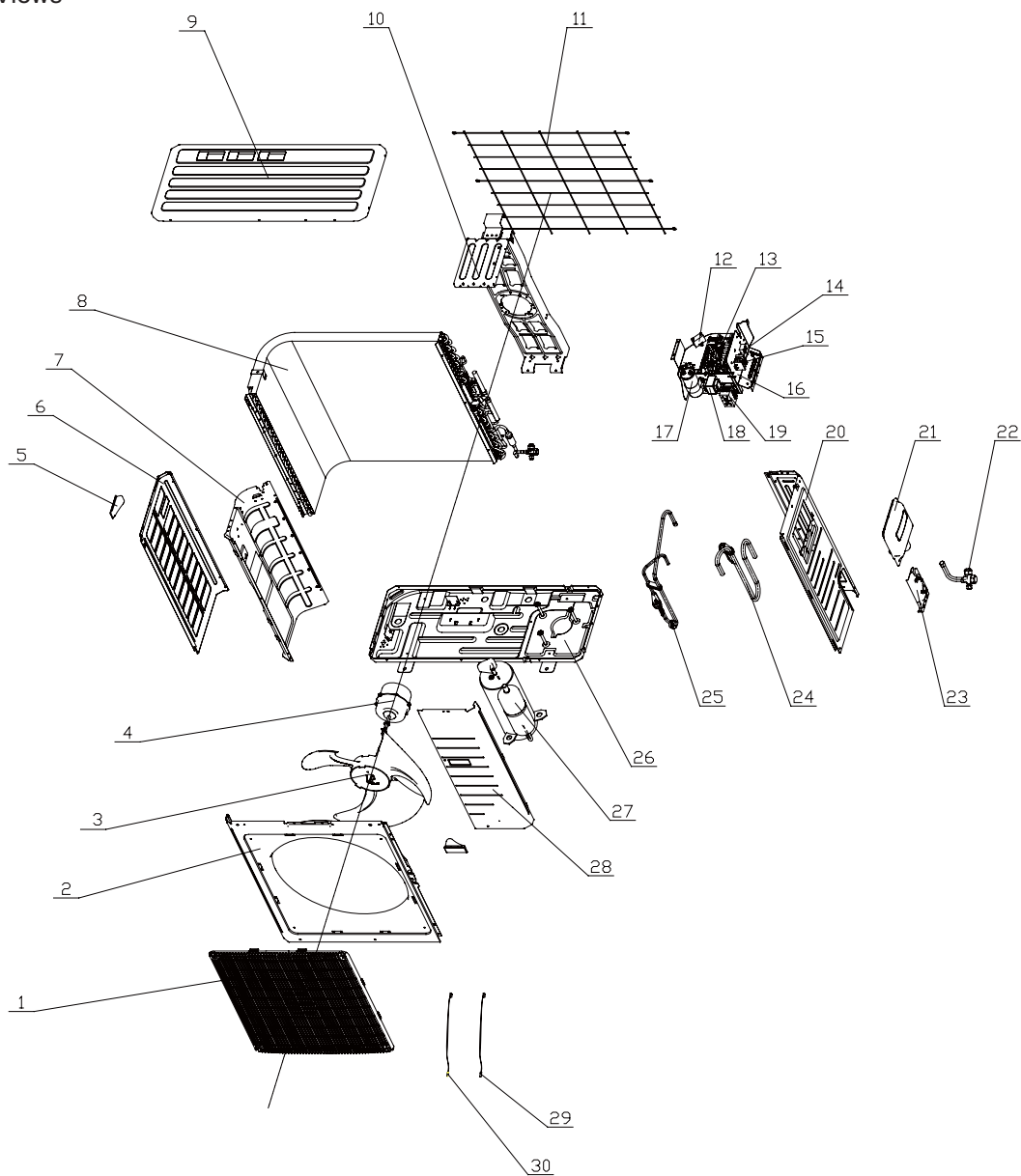


Model: GUHN24TK1AO;  
Exploded Views



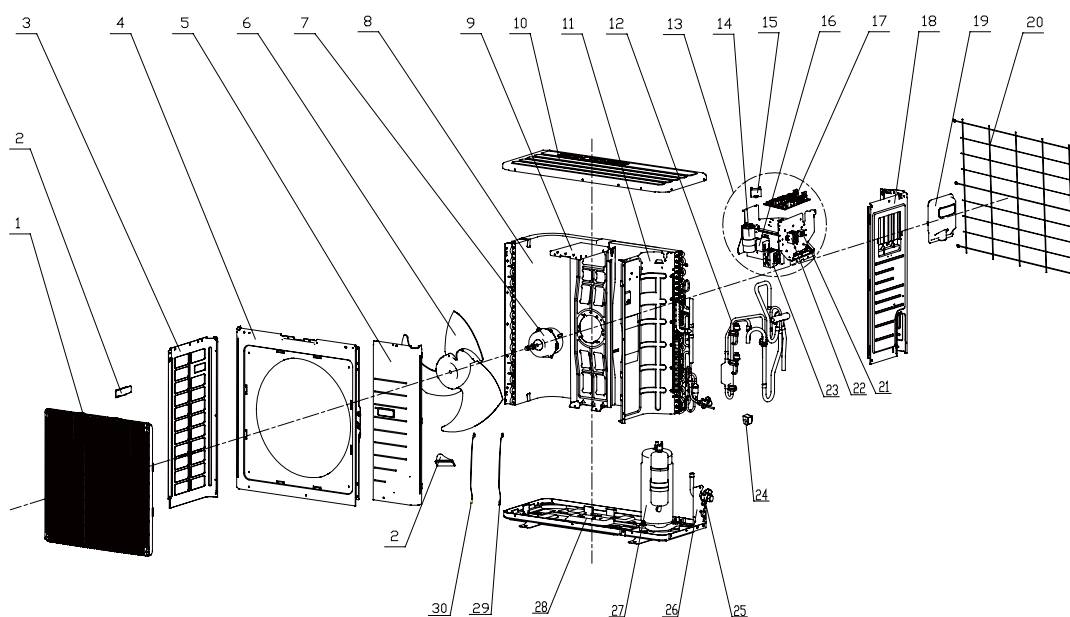
No..	Name of part	GUHN24TK1AO	
		Product Code	CF021W0411
		Part code	Quantity
1	Front grill	'22414102	1
2	left handle	'26235401	1
3	Cabinet	'01433017P	1
4	Front Side Plate	'01303309P	1
5	Handle	'26235253	1
6	Axial Flow Fan	'10335253	1
7	Fan Motor	'150154512	1
8	Motor Support Sub-Assy	'01705103	1
9	Top Cover	'01255013P	1
10	Condenser Assy	'01125377	1
11	Mid-clapboard sub-assy	'01233024	1
12	Magnet Coil	'430004002	1
13	4-way Valve Assy	'04145345	1
14	Electrical Box Assy	'01395826	1
15	AC Contactor	'44010222	1
16	Main Board	'30224058	1
17	Terminal Board	'420101851	1
18	Rear Side Plate Sub-Assy	'01303271P	1
19	Rear Grill	'01473028	1
20	Terminal Board	'420111451	1
21	Transformer	'43110233	1
22	Capacitor CBB61	'33010013	1
23	Capacitor CBB65	'33000039	1
24	Valve Support Sub-Assy	'01715001	1
25	Gas Valve Sub-Assy	'07105252	1
26	Compressor and fittings	'00103077	1
27	Base Plate Sub-Assy	'01195308P	1

Model: GUCN30TK1AO  
Exploded Views



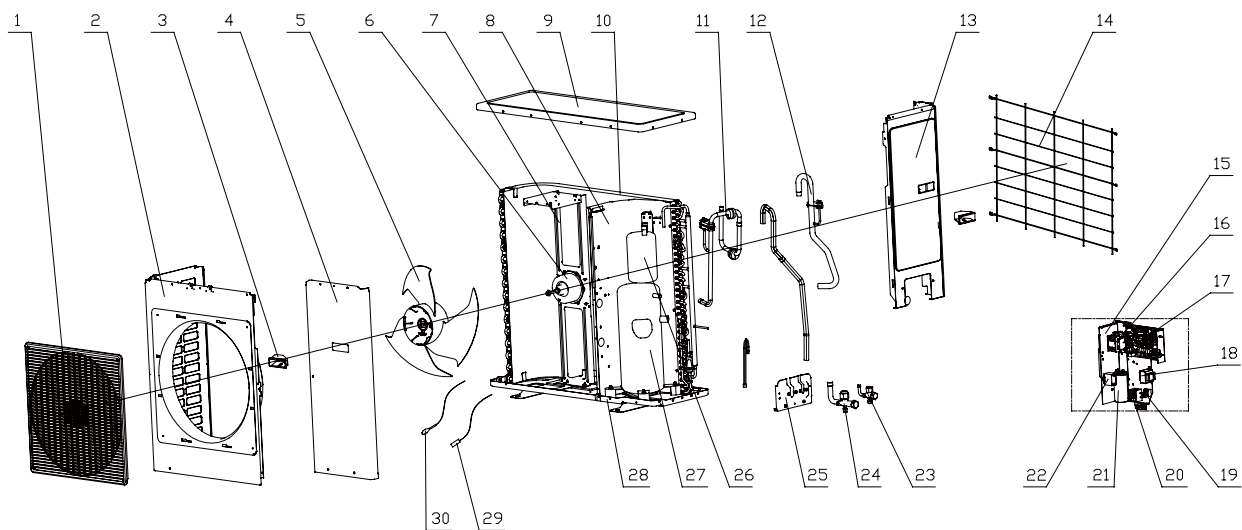
No..	Name of part	GUCN30TK1AO	
		Product Code	CF021W1191
		Part code	Quantity
1	Front Grill	'22415003	1
2	Cabinet	'01435004P	1
3	Axial Flow Fan	'10335005	1
4	Fan Motor	'1501506207	1
5	Left handle	'26235401	2
6	Left Side Plate	'01305043P	1
7	Clapboard	'01235074	1
8	Condenser Assy	'01125344	1
9	Top Cover Sub-Assy	'01255007	1
10	Motor Support Sub-Assy	'01705016	1
11	Rear Grill	'01475008	1
12	Capacitor	'33010009	1
13	Main Board	'30224057	1
14	Terminal Board	'420101851	1
15	Terminal Board	'420111451	1
16	Electric Box Assy	'01395642	1
17	Capacitor	'33000039	1
18	Transformer	'43110233	1
19	AC Contactor	'44010222	1
20	Right Side Plate	'01305044P	1
21	Big Handle	'26235001	1
22	Cut-off Valve	'07133072	1
23	Valve Support Sub-Assy	'01715020P	1
24	Inhalation Tube Sub-Assy	'04675436	1
25	Discharge Tube Sub-Assy	'04635444	1
26	Chassis Sub-assy	'01195307P	1
27	Compressor and fittings	'00103216	1
28	Front Side Plate	'01305086P	1
29	Tube Sensor	'39000017G	1
30	Tube Sensor	'390002062G	1

Model: GUHN30TK1AO;  
Exploded Views



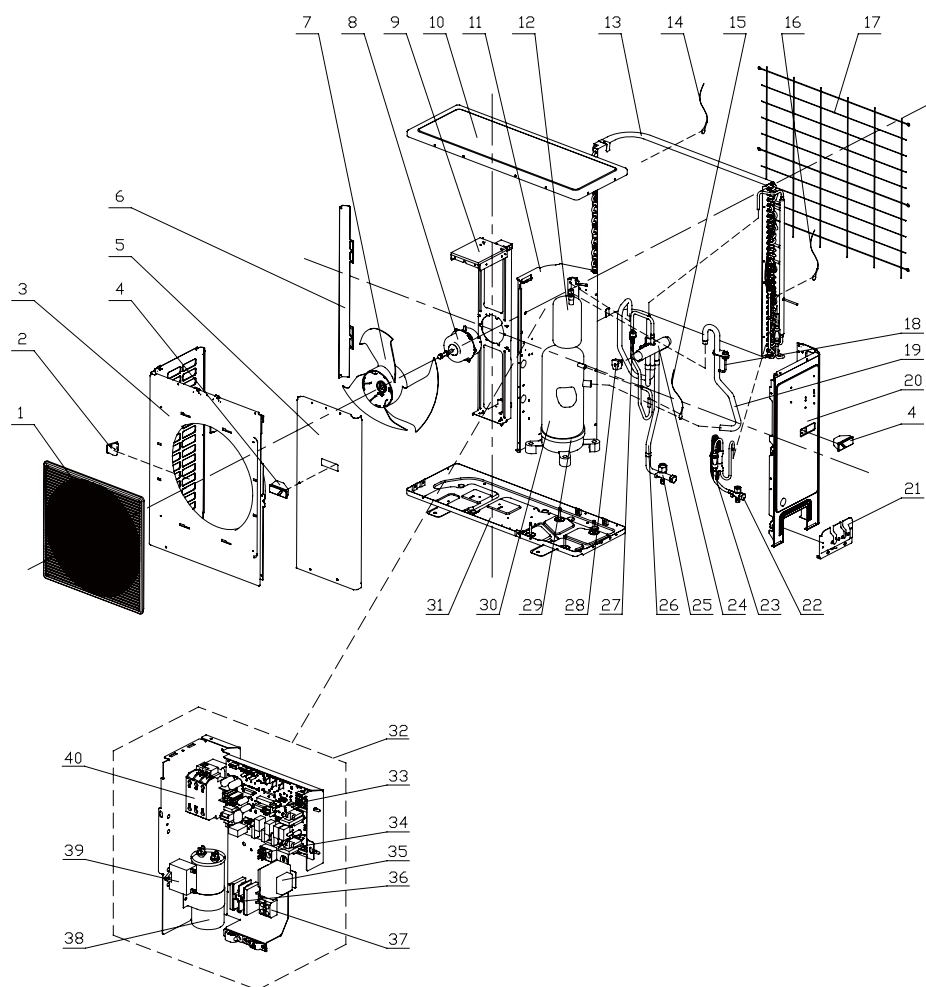
No.	Name of part	GUHN30TK1AO	
		Product Code	CF021W0421
		Part code	Quantity
1	Front Grill	'22415003	1
2	left handle	'26235401	2
3	Left Side Plate	'01305043P	1
4	Cabinet	'01435004P	1
5	Front Side Plate	'01305086P	1
6	Axial Flow Fan	'10335005	1
7	Fan Motor	'1501506207	1
8	Condenser Assy	'01125388	1
9	Motor Support Sub-Assy	'01705016	1
10	Top Cover Sub-Assy	'01255007	1
11	Clapboard	'01235074	1
12	4-way Valve Assy	'04145343	1
13	Electrical Box Assy	'01395825	1
14	Capacitor CBB65	'33000039	1
15	Capacitor CBB61	'33010009	1
16	Transformer	'43110233	1
17	Main Board	'30224058	1
18	Right Side Plate	'01305044P	1
19	Big Handle	'26235001	1
20	Rear Grill	'01475008	1
21	Terminal Board	'420101851	1
22	Terminal Board	'420111451	1
23	AC Contactor	'44010222	1
24	Cut-off Valve	'07133072	1
25	Valve Support Sub-Assy	'01715020P	1
26	Compressor and fittings	'00103216	1
27	Base Plate Sub-Assy	'01195307P	1

Model: GUCN36TK1AO;  
Exploded Views



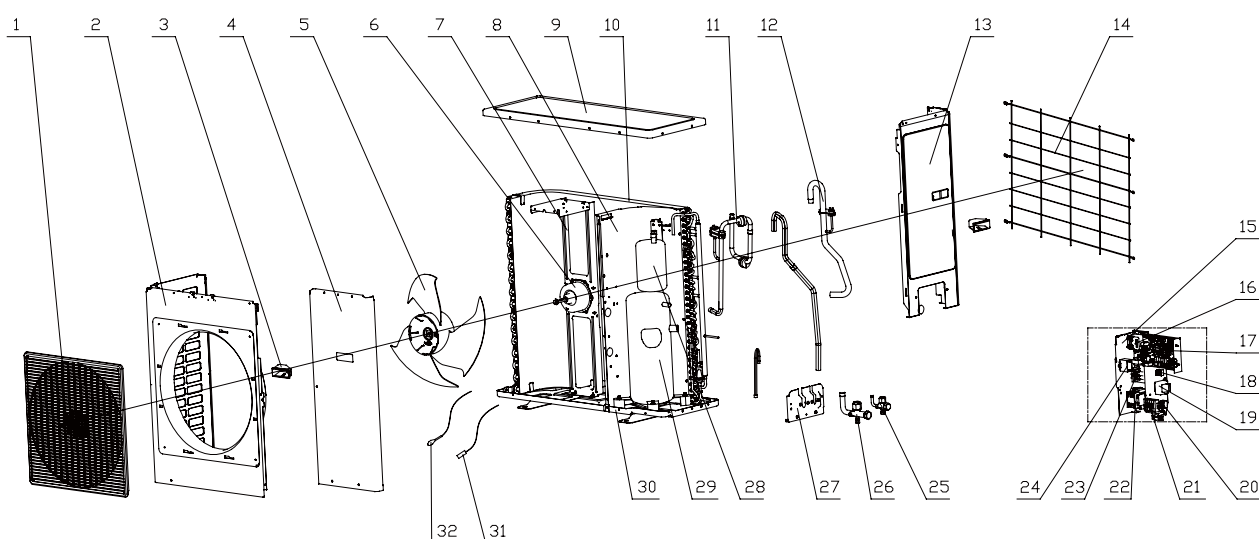
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		Product Code	CF021W1420
		Part code	Quantity
1	Panel Grille	'22265401	1
2	Front Plate	'01435103P	1
3	Handle	'26235253	2
4	Front Side Plate	'01305406	1
5	Axial-flow Fan	'10335401	1
6	Fan Motor	'150154011	1
7	Motor Support	'01705402	1
8	Mid Clapboard Sub-Assy	'01235403	1
9	Top Cover	'01255012P	1
10	Condenser Assy	'0112532801	1
11	Discharge Tube Sub-Assy	'04635388	1
12	Inhalation Tube Sub-Assy	'04675735	1
13	Rear Side Plate Sub-Assy	'01305402	1
14	Rear Grill	'01475401	1
15	Electric Box Assy	'01395670	1
16	AC Contactor	'44010254	1
17	Main Board	'30224057	1
18	Transformer	'4311023302	1
19	Terminal board	'420101851	1
20	Terminal board	'420111451	1
21	Capacitor CBB65	'33000039	1
22	Capacitor CBB61	'33010013	1
23	Cut-off Valve	'07100105	1
24	Gas Valve Sub-Assy	'07103401	1
25	Valve Support Sub-Assy	'01715402	1
26	Gas-liquid Separator Assy	'07255403	1
27	Compressor and fittings	'00205229	1
28	Base Plate Sub-Assy	'01205092P	1
29	Discharge sensor	'39000017G	1
30	Temperature Sensor	'390002063G	1

Model: GUhN36TK1AO;  
Exploded Views



No.	Name of part	GUhN36TK1AO	
		Product Code	CF021W0430
		Part code	Quantity
1	Front Grill	'22265401	1
2	left handle	'26235401	1
3	Cabinet	'01435103P	1
4	Handle	'26235253	2
5	Front Side Plate Sub-Assy	'01305406	1
6	Condenser support plate Sub-Assy	'01175402	1
7	Axial Flow Fan	'10335401	1
8	Fan Motor	'150154011	1
9	Motor Support Sub-Assy	'01705402	1
10	Top Cover Sub-Assy	'01265390	1
11	Clapboard Sub-Assy	'01235403	1
12	Gas-liquid Separator Assy	'07255403	1
13	Condenser Assy	'01125328	1
14	Sensor	'390002063G	1
15	Sensor	'3900012134G	1
16	Sensor	'3900012128G	1
17	Rear Grill	'01475401	1
18	Pressure Protect Switch	'46020007	1
19	Inhalation Tube Sub-Assy	'04675735	1
20	Rear Side Plate Sub-Assy	'01305402	1
21	Valve Support Sub-Assy	'01715402	1
22	Cut-off Valve	'071302115	1
23	Capillary Sub-Assy	'04105350	1
24	4-way Valve	'43000405	1
25	Gas Valve Sub-Assy	'07103401	1
26	4-way Valve Assy	'04145333	1
27	high pressure switch	'46025201	1
28	Magnet Coil	'43000400	1
29	Electric heater	'76515404	1
30	Compressor and fittings	'00205229	1
31	Chassis Assy	'01205092P	1
32	Electric Box Assy	'01395757	1
33	Main Board	'30224058	1
34	Terminal Board	'42011147	1
35	Transformer	'4311023302	1
36	Terminal Board	'420111451	1
37	Terminal Board	'420101851	1
38	Capacitor	'33000039	1
39	Capacitor	'33010013	1
40	AC Contactor	'44010254	1

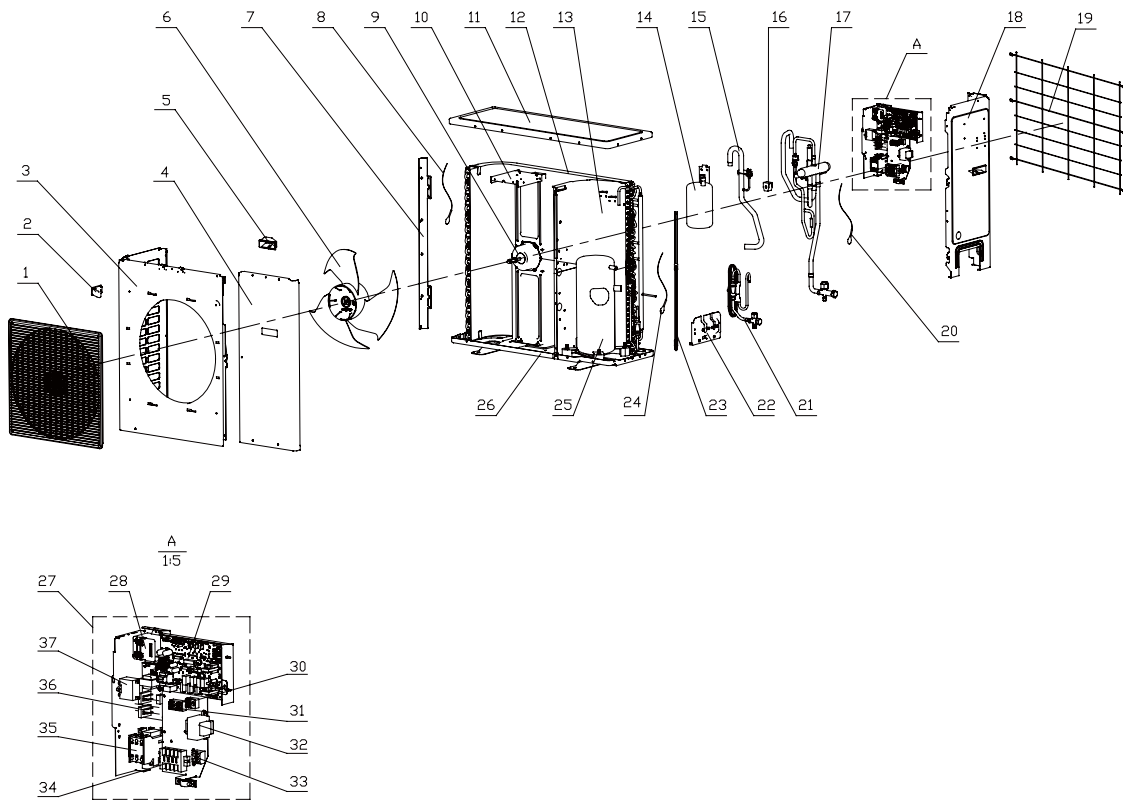
Model: GUCN36TM1AO;  
Exploded Views



No.	Name of part	GUCN36TM1AO	
		Product Code	CF021W1431
		Part code	Quantity
1	Panel Grille	'22265401	1
2	Front Plate	'01435103P	1
3	Handle	'26235253	2
4	Front Side Plate	'01305406	1
5	Axial-flow Fan	'10335401	1
6	Fan Motor	'150154011	1
7	Motor Support	'01705402	1
8	Mid Clapboard Sub-Assy	'01235403	1
9	Top Cover	'01255012P	1
10	Condenser Assy	'0112532801	1
11	Discharge Tube Sub-Assy	'04635388	1
12	Inhalation Tube Sub-Assy	'04675735	1
13	Rear Side Plate Sub-Assy	'01305402	1
14	Rear Grill	'01475401	1
15	Electric Box Assy	'01395641	1
16	AC Contactor	'44010226	1
17	Main Board	'30224057	1
18	Transformer	'43110242	1
19	Terminal board	'420101851	1
20	Terminal board	'42011043	1
21	Capacitor CBB65	0	0
22	Capacitor CBB61	'33010013	1
23	Cut-off Valve	'07100105	1
24	Gas Valve Sub-Assy	'07103401	1
25	Valve Support Sub-Assy	'01715402	1
26	Gas-liquid Separator Assy	'07255403	1
27	Compressor and fittings	'00205249	1
28	Base Plate Sub-Assy	'01205092P	1
29	Discharge sensor	'39000017G	1
30	Temperature Sensor	'390002063G	1

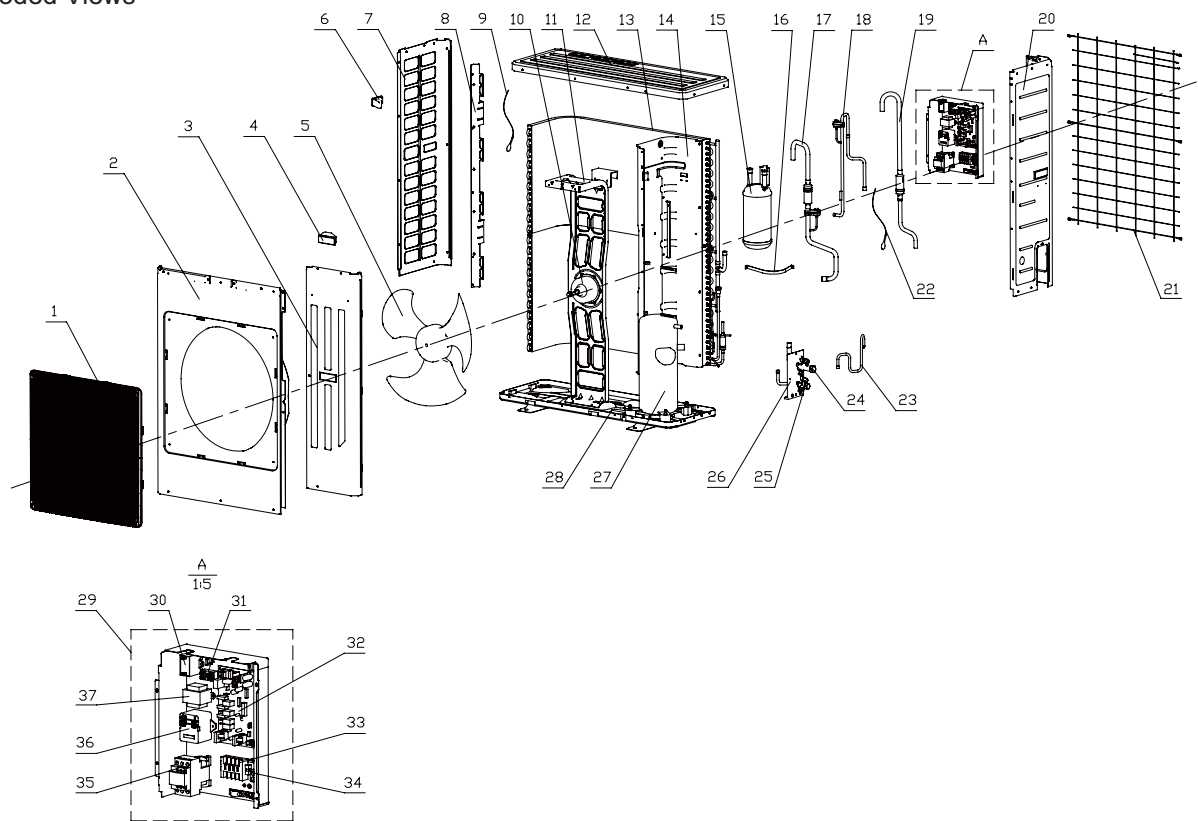


Model: GUHN36TM1AO;  
Exploded Views



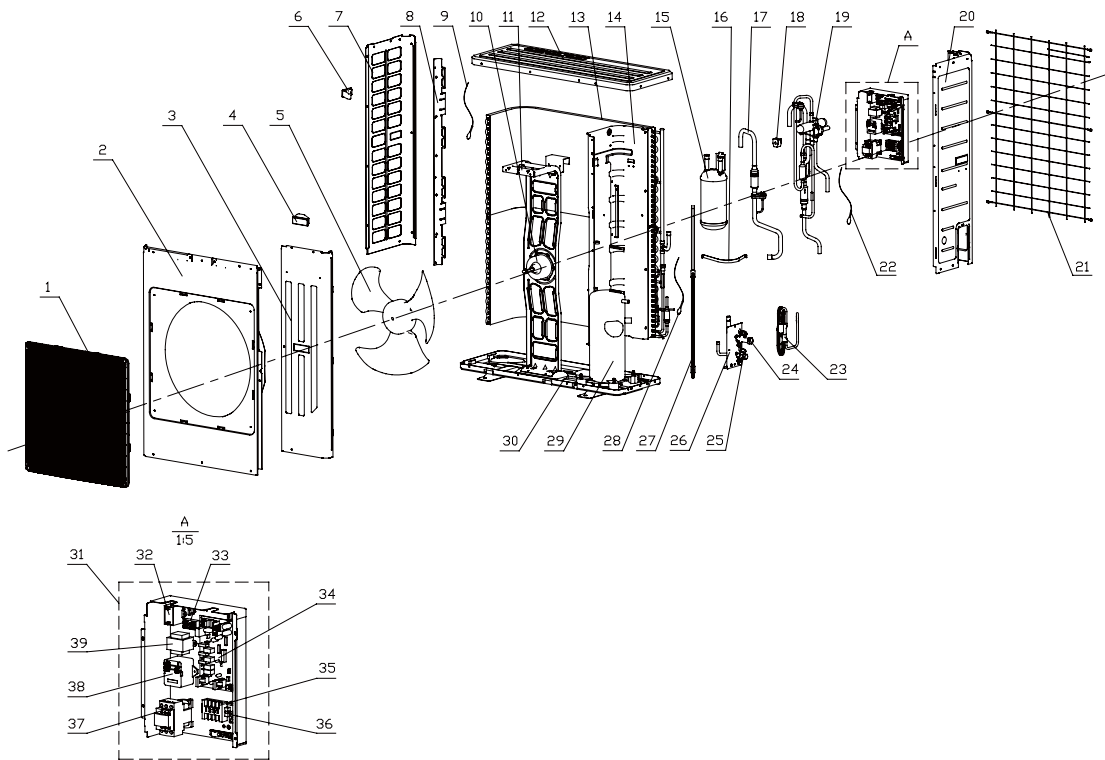
No.	Name of part	GUHN36TM1AO	
		Product Code	CF021W0441
		Part code	Quantity
1	Front Grill	'22265401	1
2	left handle	'26235401	1
3	Cabinet	'01435103P	1
4	Front Side Plate Sub-Assy	'01305406	1
5	Handle	'26235253	2
6	Axial Flow Fan	'10335401	1
7	Condenser support plate Sub-Assy	'01175402	1
8	Sensor	'390002063G	1
9	Fan Motor	'150154011	1
10	Motor Support Sub-Assy	'01705402	1
11	Top Cover	'01255012P	1
12	Condenser Assy	'01125328	1
13	Clapboard Sub-Assy	'01235403	1
14	Gas-liquid Separator Assy	'07255403	1
15	Inhalation Tube Sub-Assy	'04675735	1
16	Magnet Coil	'43000400	1
17	4-way Valve Assy	'04145333	1
18	Rear Side Plate Sub-Assy	'01305402	1
19	Rear Grill	'01475401	1
20	Sensor	'3900012134G	1
21	Capillary Sub-Assy	'04105350	1
22	Valve Support Sub-Assy	'01715402	1
23	Electric heater	'76515404	1
24	Sensor	'3900012128G	1
25	Compressor and fittings	'00205249	1
26	Chassis Assy	'01205092P	1
27	Electric Box Assy	'01395756	1
28	Phase Reverse Protector	'46020052	1
29	Main Board	'30224058	1
30	Terminal Board	'42011147	1
31	Terminal Board	'42011103	1
32	Transformer	'4311023302	1
33	Terminal Board	'420101851	1
34	Terminal Board	'42011043	1
35	AC Contactor	'44010226	1
36	Over Current Protector	'46020115	1
37	Capacitor	'33010013	1

Model: GUCN42TM1AO;  
Exploded Views



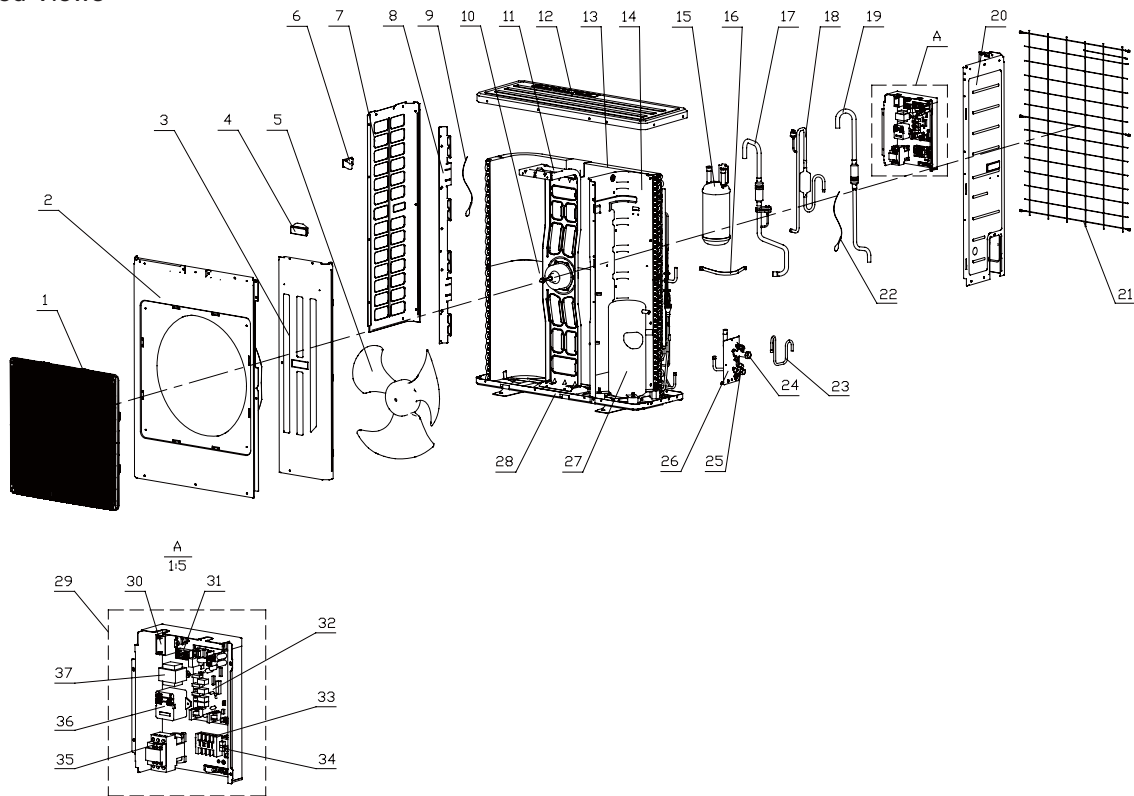
No.	Name of part	GUCN42TM1AO	
		Product Code	CF021W1441
		Part code	Quantity
1	Front Grill	'22415005	1
2	Cabinet	'01435007P	1
3	Front Side Plate Sub-Assy	'01315414	1
4	Handle	'26235253	2
5	Axial Flow Fan	'10335010	1
6	left handle	'26235401	1
7	Left Side Plate	'01305064P	1
8	Condenser support plate	'01895311	1
9	Sensor	'390002062G	1
10	Fan Motor	'150154516	1
11	Motor Support Sub-Assy	'01705111	1
12	Top Cover	'01255009P	1
13	Condenser Assy	` 0112520001301	1
14	Clapboard assy	'01235041	1
15	Gas-liquid Separator Sub-Assy	'07225018	1
16	Liquid Accumulator Clamp	'02145008	1
17	Inhalation Tube Sub-Assy	'04675439	1
18	Discharge Tube Sub-Assy	` 04635729	1
19	Gas Returnning Pipe Sub-assy	` 04675441	1
20	Right Side Plate Sub-Assy	'01305441P	1
21	Rear Grill	'01475012	1
22	Sensor	'3900012134G	1
23	Connecting Pipe	` 05025856	1
24	Cut-off Valve	'0713507701	1
25	Cut-off Valve	'0713505201	1
26	Valve Support Sub-Assy	'01715257P	1
27	Compressor and fittings	'00205256	1
28	Chassis Sub-assy	'01205139P	1
29	Electric Box Assy	'01395833	1
30	Capacitor	'33010009	1
31	Terminal Board	'42011103	1
32	Main Board	'30224057	1
33	Terminal Board	'42011043	1
34	Terminal Board	'420101851	1
35	AC Contactor	'44010213	1
36	Phase Reverse Protector	'46020052	1
37	Transformer	'43110233	1

Model: GUHN42TM1AO;  
Exploded Views



No.	Name of part	GUHN42TM1AO	
		Product Code	CF021W0451
		Part code	Quantity
1	Front Grill	'22415005	1
2	Cabinet	'01435007P	1
3	Front Side Plate Sub-Assy	'01315414	1
4	Handle	'26235253	2
5	Axial Flow Fan	'10335010	1
6	left handle	'26235401	1
7	Left Side Plate	'01305064P	1
8	Condenser support plate	'01895311	1
9	Sensor	'390002063G	1
10	Fan Motor	'150154516	1
11	Motor Support Sub-Assy	'01705111	1
12	Top Cover	'01255009P	1
13	Condenser Assy	'01125200013	1
14	Clapboard assy	'01235041	1
15	Gas-liquid Separator Sub-Assy	'07225018	1
16	Liquid Accumulator Clamp	'02145008	1
17	Inhalation Tube Sub-Assy	'04675439	1
18	Magnet Coil	'430004002	1
19	4-way Valve Assy	'04145344	1
20	Right Side Plate Sub-Assy	'01305441P	1
21	Rear Grill	'01475012	1
22	Sensor	'3900012134G	1
23	Capillary Sub-Assy	'04105359	1
24	Cut-off Valve	'0713505201	1
25	Cut-off Valve	'0713507701	1
26	Valve Support Sub-Assy	'01715257P	1
27	Electric heater	'76515404	1
28	Sensor	'3900012121G	1
29	Compressor and fittings	'00205256	1
30	Chassis Sub-assy	'01205139P	1
31	Electric Box Assy	'01395822	1
32	Capacitor	'33010009	1
33	Terminal Board	'42011103	1
34	Main Board	'30224058	1
35	Terminal Board	'42011043	1
36	Terminal Board	'420101851	1
37	AC Contactor	'44010213	1
38	Phase Reverse Protector	'46020052	1
39	Transformer	'43110233	1

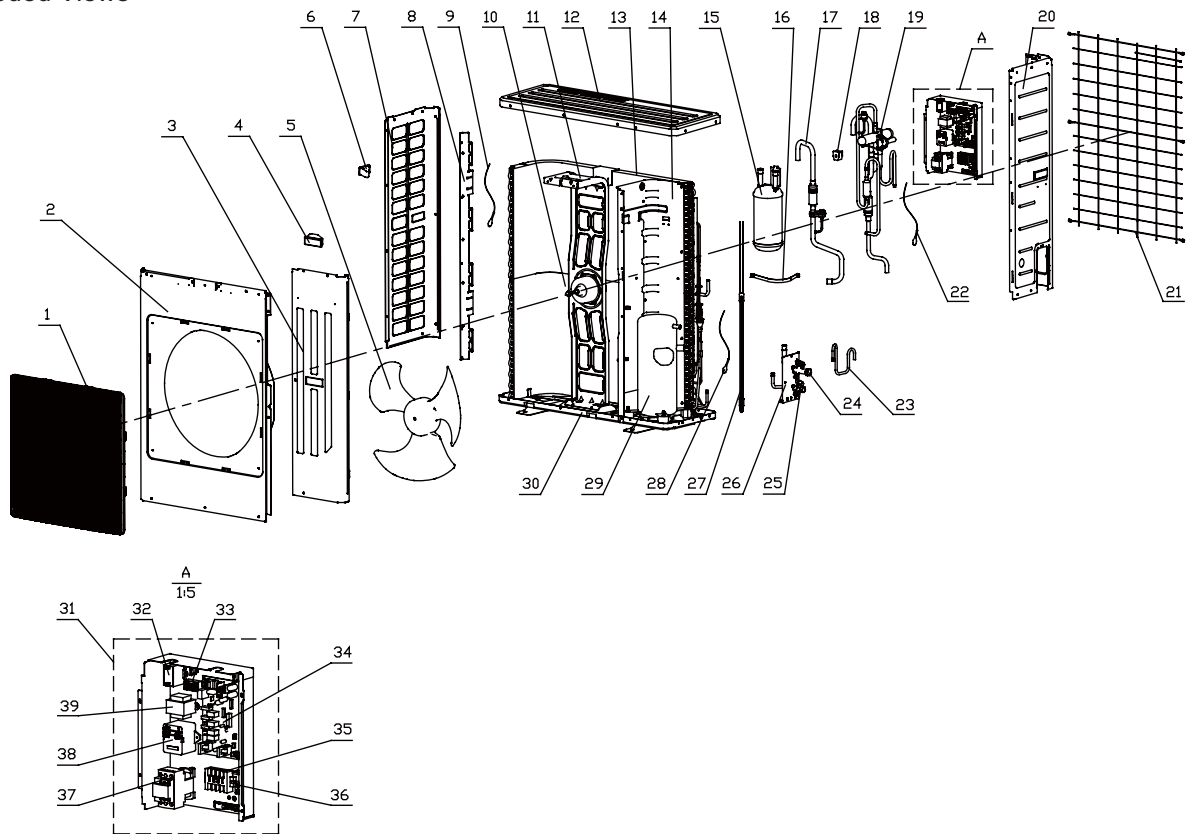
Model: GUCN48TM1AO;  
Exploded Views



No.	Name of part	GUCN48TM1AO	
		Product Code	CF021W1451
		Part code	Quantity
1	Front Grill	'22415005	1
2	Cabinet	'01435007P	1
3	Front Side Plate Sub-Assy	'01315414	1
4	Handle	'26235253	2
5	Axial Flow Fan	'10335010	1
6	left handle	'26235401	1
7	Left Side Plate	'01305064P	1
8	Condenser support plate	'01795020	1
9	Sensor	'390002062G	1
10	Fan Motor	'150154516	1
11	Motor Support Sub-Assy	'01705111	1
12	Top Cover	'01265389	1
13	Condenser Assy	` 0112520001401	1
14	Clapboard assy	'01235041	1
15	Gas-liquid Separator Sub-Assy	'07225018	1
16	Liquid Accumulator Clamp	'02145008	1
17	Inhalation Tube Sub-Assy	'04675439	1
18	Discharge Tube Sub-Assy	` 04635455	1
19	Gas Returnning Pipe Sub-assy	` 04675441	1
20	Right Side Plate Sub-Assy	'01305441P	1
21	Rear Grill	'01475012	1
22	Sensor	'3900012134G	1
23	Connecting Pipe	` 05025849	1
24	Cut-off Valve	'0713505201	1
25	Cut-off Valve	'0713507701	1
26	Valve Support Sub-Assy	'01715257P	1
27	Compressor and fittings	'00205255	1
28	Chassis Sub-assy	'01205139P	1
29	Electric Box Assy	'01395833	1
30	Capacitor	'33010009	1
31	Terminal Board	'42011103	1
32	Main Board	'30224057	1
33	Terminal Board	'42011043	1
34	Terminal Board	'420101851	1
35	AC Contactor	'44010213	1
36	Phase Reverse Protector	'46020052	1
37	Transformer	'43110233	1

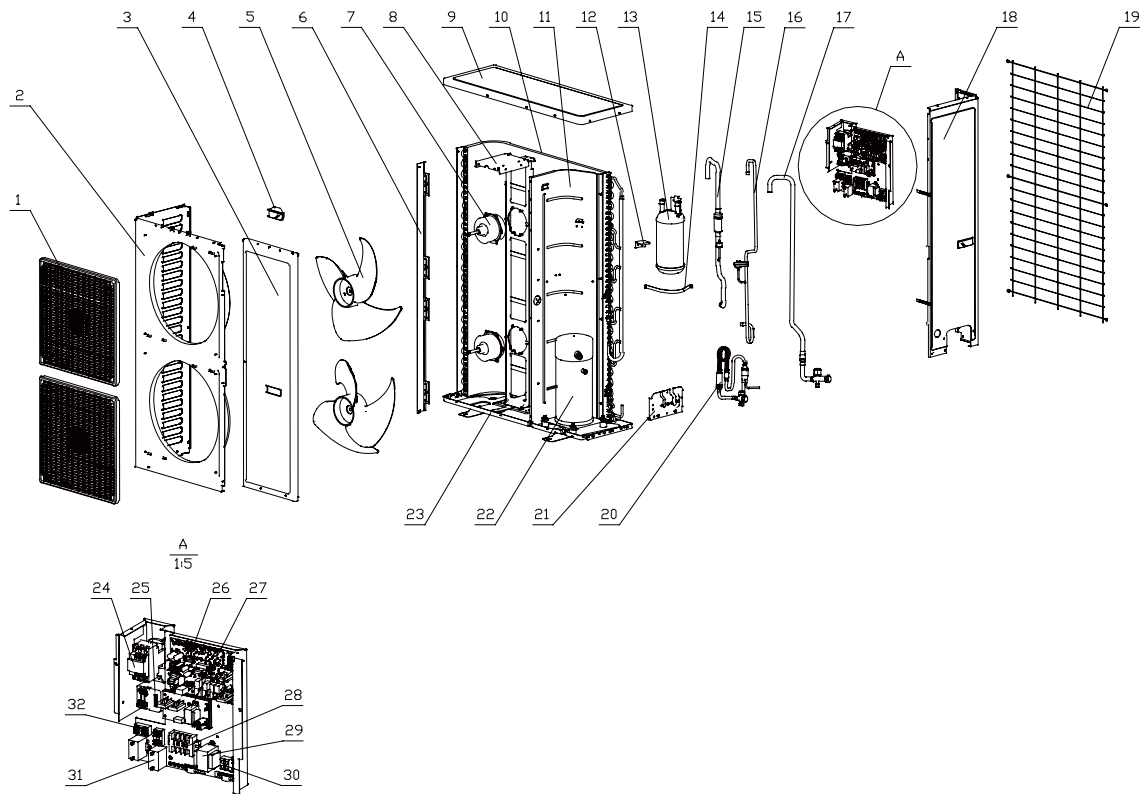


Model: GUHN48TM1AO;  
Exploded Views



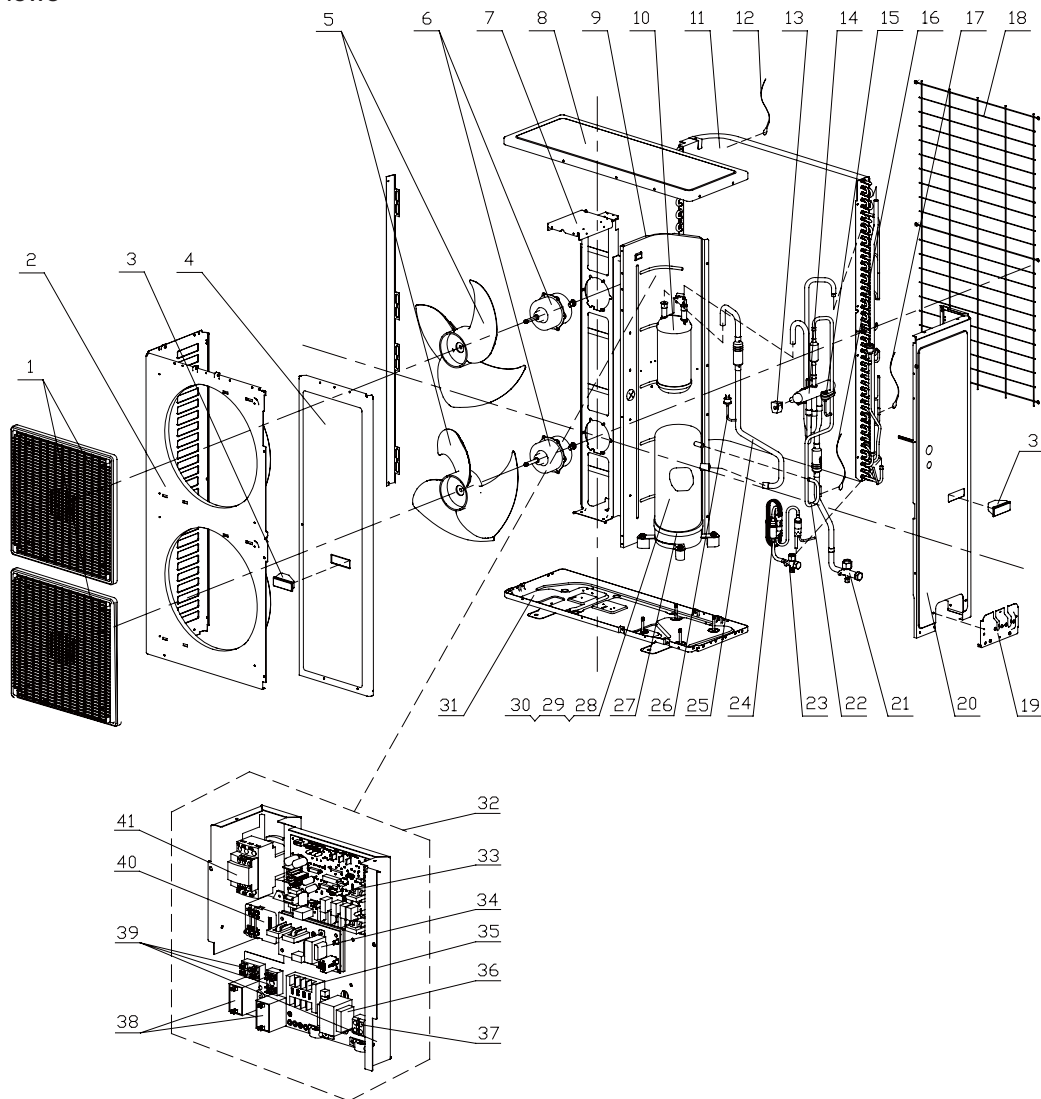
No.	Name of part	GUHN48TM1AO	
		Product Code	CF021W0461
		Part code	Quantity
1	Front Grill	'22415005	1
2	Cabinet	'01435007P	1
3	Front Side Plate Sub-Assy	'01315414	1
4	Handle	'26235253	2
5	Axial Flow Fan	'10335010	1
6	left handle	'26235401	1
7	Left Side Plate	'01305064P	1
8	Condenser support plate	'01795020	1
9	Sensor	'390002063G	1
10	Fan Motor	'150154516	1
11	Motor Support Sub-Assy	'01705111	1
12	Top Cover	'01255009P	1
13	Condenser Assy	'01125200014	1
14	Clapboard assy	'01235041	1
15	Gas-liquid Separator Sub-Assy	'07225018	1
16	Liquid Accumulator Clamp	'02145008	1
17	Inhalation Tube Sub-Assy	'04675439	1
18	Magnet Coil	'430004002	1
19	4-way Valve Assy	'04145349	1
20	Right Side Plate Sub-Assy	'01305441P	1
21	Rear Grill	'01475012	1
22	Sensor	'3900012134G	1
23	Capillary Sub-Assy	'04105363	1
24	Cut-off Valve	'0713505201	1
25	Cut-off Valve	'0713507701	1
26	Valve Support Sub-Assy	'01715257P	1
27	Electric heater	'76515404	1
28	Sensor	'3900012121G	1
29	Compressor and fittings	'00205255	1
30	Chassis Sub-assy	'01205139P	1
31	Electric Box Assy	'01395822	1
32	Capacitor	'33010009	1
33	Terminal Board	'42011103	1
34	Main Board	'30224058	1
35	Terminal Board	'42011043	1
36	Terminal Board	'420101851	1
37	AC Contactor	'44010213	1
38	Phase Reverse Protector	'46020052	1
39	Transformer	'33010009	1

Model: GUCN60TM1AO;  
Exploded Views



No.	Name of part	GUCN60TM1AO	
		Product Code	CF021W1460
		Part code	Quantity
1	Panel Grille	'22414102	2
2	Front Plate	'01435436	1
3	Front Side Plate	'01305431	1
4	Handle	'26235253	2
5	Axial-flow Fan	'1033873101	2
6	Condenser support	'01795005	1
7	Fan Motor	'15701108	2
8	Motor Support Sub-Assy	'01705017	1
9	Top Cover	'01255472	1
10	Condenser Assy	'01125340	1
11	Clapboard Sub-Assy	'01235020	1
12	Liquid Accumulator Limit equip	0	0
13	Gas-liquid Separator Sub-Assy	'07225018	1
14	Liquid Accumulator Clamp	'01745001	1
15	Inhalation Tube Sub-Assy	'04675367	1
16	Discharge Tube Sub-Assy	'04635401	1
17	Gas Returnning Pipe Sub-assy	'04675395	1
18	Rear Side Plate	'01315403P	1
19	Mesh Enclosure	'01475006	1
20	Capillary Sub-Assy	0	0
21	Valve Support Sub-Assy	'01715001	1
22	Compressor	'00205255	1
23	Base Plate Sub-Assy	'012054337	1
24	AC Contactor	'44010213	1
25	Phase Reverse Protector	'46020052	1
26	Main Board	'30224057	1
27	Over Current Protector	'46020112	1
28	Terminal board	'42011043	1
29	Transformer	'43110171	1
30	Terminal board	'420101851	1
31	Capacitor	'33010037	2
32	Terminal board	'42011103	3

Model: GUHN60TM1AO;  
Exploded Views



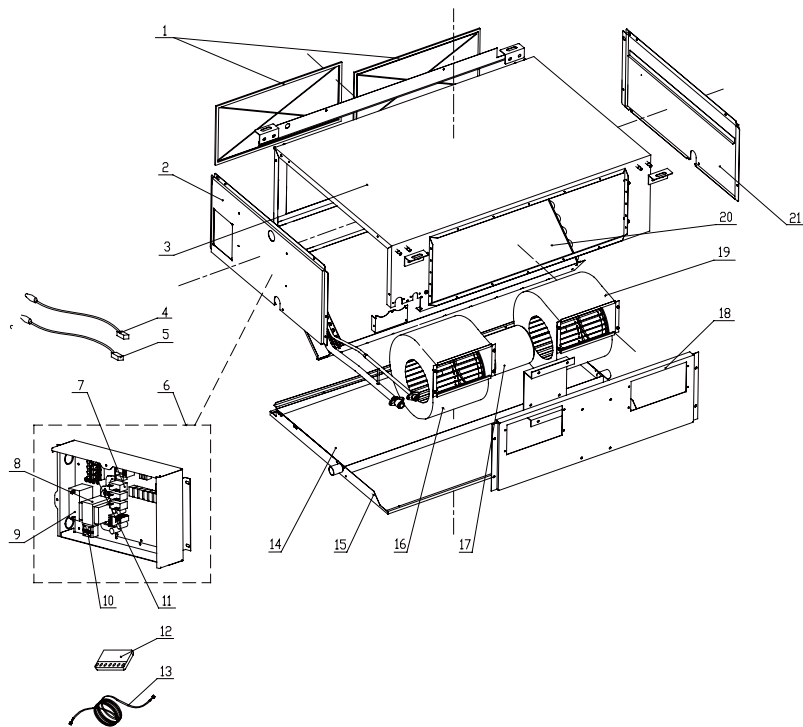
No.	Name of part	GUHN60TM1AO	
		Product Code	CF021W0470
		Part code	Quantity
1	Front grill	'22414102	2
2	Cabinet	'01435436	1
3	Handle	'26235253	2
4	Front Side Plate Sub-Assy	'01305430	1
5	Axial Flow Fan	'1033873101	2
6	Fan Motor	'15701108	2
7	Motor Support Sub-Assy	'01705017	1
8	Top Cover	'01255472	1
9	Clapboard Sub-Assy	'01235020	1
10	Gas-liquid Separator Sub-Assy	'07225018	1
11	Condenser Assy	'01125295	1
12	Sensor	'390002065	1
13	Magnet Coil	'430004002	1
14	4-way Valve	'43000405	1
15	high pressure switch	'390002065	1
16	Sensor	'3900012129G	1
17	Sensor	'3900012121G	1
18	Rear Grill	'01475006	1
19	Valve Support Sub-Assy	'01715001	1
20	Rear Side Plate Sub-Assy	'01315403P	1
21	Gas Valve Sub-Assy	'07103401	1
22	4-way Valve Assy	'04145365	1
23	Cut-off Valve	'071302115	1
24	Capillary Sub-Assy	'04105379	1
25	Inhalation Tube Sub-Assy	'04675367	1
26	Pressure Protect Switch	'46020007	1
27	Electric heater	'76515404	1
28	Compressor and fittings	'00205255	1
29	Compressor Gasket	` 76710209	4
30	Overload Protector	0	0
31	Chassis Sub-assy	'012054337	1
32	Electric Box Assy	'01395746	1
33	Main Board	'30224058	1
34	Over Current Protector	'46020103	1
35	Terminal Board	'42011043	1
36	Transformer	'43110242	1
37	Terminal Board	'420101851	1
38	Capacitor	'33010037	2
39	Terminal Board	'42011103	3
40	Phase Reverse Protector	'46020052	1
41	AC Contactor	'44010213	1

## 5.2 Indoor Unit

### 5.2.1 Duct Type

Model:GFH24TK1BI; GFH30TK1BI; GFH36TK1BI; GFH42TK1BI; GFH48TK1BI; GFH60TK1BI

Exploded Views:



No.	Name of part	GFH24TK1BI		GFH30TK1BI	
		Product Code	CF022N0191	Product Code	CF022N0201
		Part code	Quantity	Part code	Quantity
1	Filter Sub-Assy	'11125303	2	'11125303	2
2	Left Side Plate Assy	'01315293	1	'01315293	1
3	Top Cover Assy	'01265301	1	'01265301	1
4	Ambient Temperature Sensor	'3900012123	1	'3900012123	1
5	Tube sensor	'3900012128G	1	'3900012128G	1
6	Electric Box Assy	'01395765	1	'01395765	1
7	Main Board	'30228205	1	'30228205	1
8	Transformer	'43110239	1	'43110239	1
9	Capacitor CBB61	'33010014	1	'33010014	1
10	Terminal Board	'420101851	1	'420101851	1
11	Terminal Board	'42010194	1	'42010194	1
12	Display Board	'30294219	1	'30294219	1
13	Signal Wire	` 40010232	1	` 40010232	1
14	Water Tray Assy	'01285317	1	'01285317	1
15	Bottom Cover Assy	'01265304	1	'01265304	1
16	Fan Assy (right)	'15012458	1	'15012458	1
17	Fan Motor	'15705304	1	'15705304	1
18	Fan Fixed Plate Assy	'01325301	1	'01325301	1
19	Fan Assy (left)	'15012454	1	'15012454	1
20	Evaporator Assy	'01025366	1	'01025368	1
21	Right Side Plate Assy	'01315304	1	'01315304	1

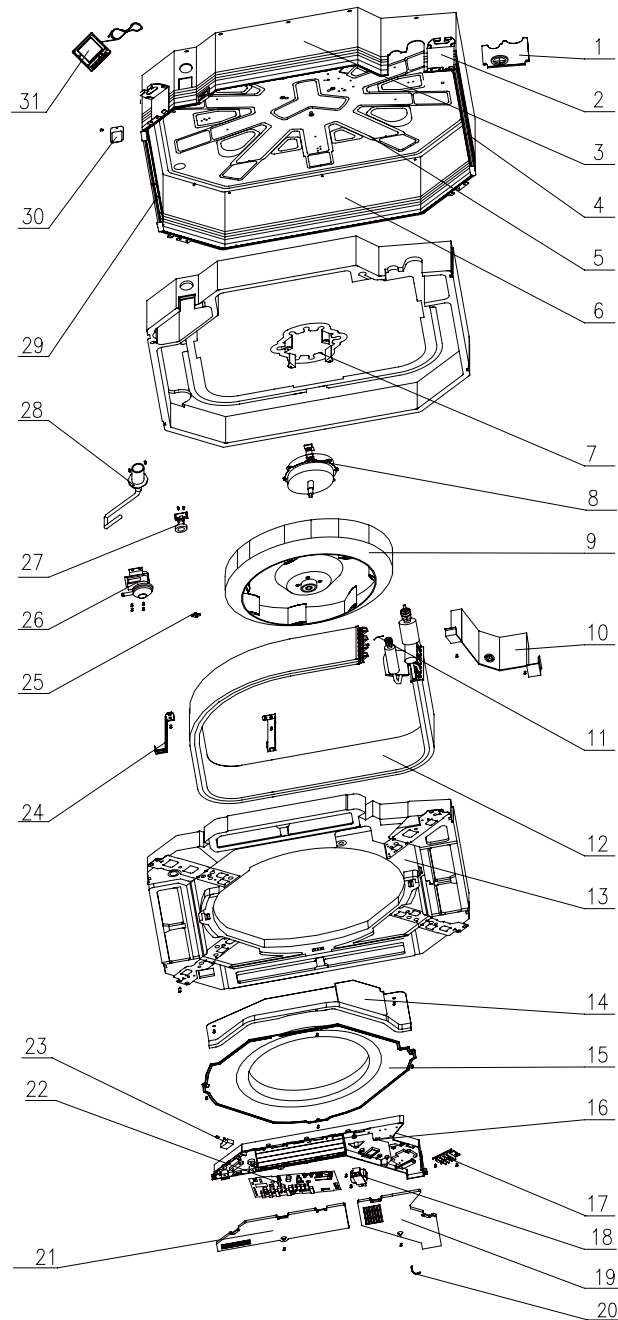
No.	Name of part	GFH36TK1BI		GFH42TK1BI	
		Product Code	CF022N0181	Product Code	CF022N0211
		Part code	Quantity	Part code	Quantity
1	Filter Sub-Assy	'111253031	2	'111253031	2
2	Left Side Plate Assy	` 01315307	1	` 01315307	1
3	Top Cover Assy	'01265306	1	'01265306	1
4	Ambient Temperature Sensor	'3900012123	1	'3900012123	1
5	Tube sensor	'390001921G	1	'390001921G	1
6	Electric Box Assy	'01395764	1	'01395764	1
7	Main Board	'30228205	1	'30228205	1
8	Transformer	'43110239	1	'43110239	1
9	Capacitor CBB61	'33010734	1	'33010734	1
10	Terminal Board	'420101851	1	'420101851	1
11	Terminal Board	'42010194	1	'42010194	1
12	Display Board	'30294219	1	'30294219	1
13	Signal Wire	` 40010232	1	` 40010232	1
14	Water Tray Assy	'01285323	1	'01285323	1
15	Bottom Cover Assy	'15265301	1	'15265301	1
16	Fan Assy (right)	'15018604	1	'15018604	1
17	Fan Motor	'15705305	1	'15705305	1
18	Fan Fixed Plate Assy	` 01325220	1	` 01325220	1
19	Fan Assy (left)	'15018603	1	'15018603	1
20	Evaporator Assy	'01025299	1	'0102529901	1
21	Right Side Plate Assy	'01315292	1	'01315292	1

No.	Name of part	GFH48TK1BI		GFH60TK1BI	
		Product Code	CF022N0221	Product Code	CF022N0290
		Part code	Quantity	Part code	Quantity
1	Filter Sub-Assy	'111253031	2	'111253032	2
2	Left Side Plate Assy	` 01315307	1	` 01309109	1
3	Top Cover Assy	'01265306	1	'01259111	1
4	Ambient Temperature Sensor	'3900012123	1	3900012123	1
5	Tube sensor	'390001921G	1	3900012121G	1
6	Electric Box Assy	'01395764	1	'01395764	1
7	Main Board	'30228205	1	'30228205	1
8	Transformer	'43110239	1	'43110239	1
9	Capacitor CBB61	'33010734	1	'33010734	1
10	Terminal Board	'420101851	1	'420101851	1
11	Terminal Board	'42010194	1	'42010194	1
12	Display Board	'30294219	1	'30294219	1
13	Signal Wire	` 40010232	1	` 40010232	1
14	Water Tray Assy	'01285323	1	'01279114	1
15	Bottom Cover Assy	'15265301	1	'01259114	1
16	Fan Assy (right)	'15018604	1	'15019066	1
17	Fan Motor	'15705305	1	'15705305	1
18	Fan Fixed Plate Assy	` 01325220	1	'01339110	1
19	Fan Assy (left)	'15018603	1	'15019065	1
20	Evaporator Assy	'0102527401	1	'01025389	1
21	Right Side Plate Assy	'01315292	1	'01315291	1



### 5.2.2 Casstee Type

Model:GKH24TK1BI; GKH36TK1BI; GKH42TK1BI; GKH48TK1BI; GKH24TK1B2I; GKH36TK1B2I; GKH42TK1B2I; GKH48TK1B2I;



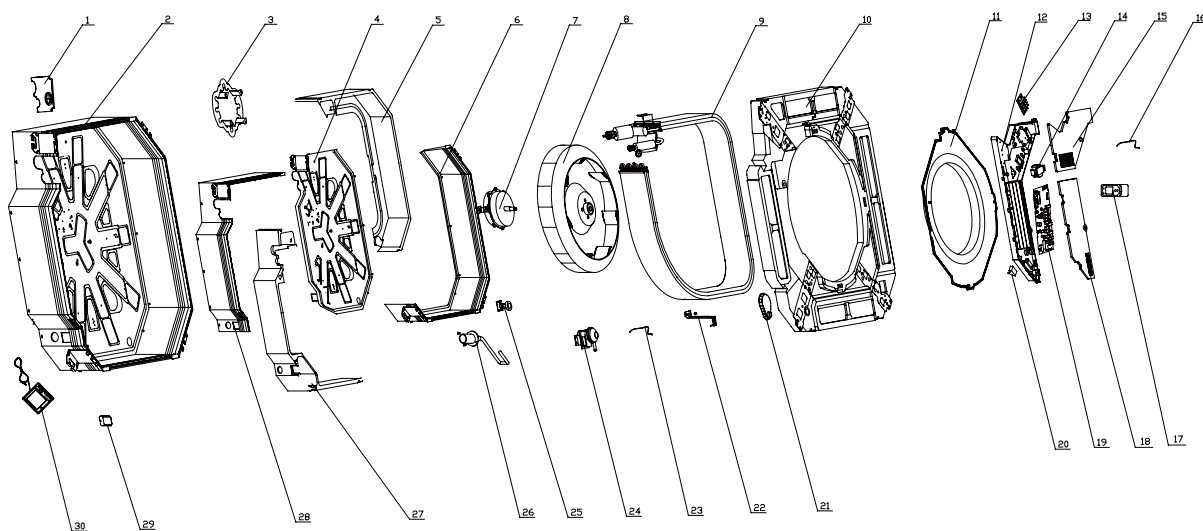
No.	Name of part	GKH24TK1BI		GKH36TK1BI	
		Product Code	ET010N0260	Product Code	ET010N0280
		Part code	Quantity	Part code	Quantity
1	Tube Exit plate	'01382715	1	'01382715	1
2	Body Fixing Plate	'01332701	4	'01332701	4
3	Front Side Plate	'01302718	1	'01302713	1
4	Left Side Plate	'01302715	1	'01302711	1
5	Base Plate	'01222701	1	'01222701	1
6	Rear Side Plate	'01302714	1	'01302709	1
7	Motor Support	'01702701	1	'01702701	1
8	MotorFN35B	'15709404	1	'15709410	1
9	Centifugal Fan	'10312705	1	'10310101	1
10	Evaporator Linkage	'01074042	1	'01072732	1
11	Tube sensor	'390001921G	1	'390001921G	1
12	Evaporator Assy	'01029453	1	'0102940201	1
13	Water Tray Assy	'20182701	1	'20182701	1
14	Electric Base Plate	'01412721	1	'01412721	1
15	Flow-guide Loop	'10372701	1	'10372722	1
16	Electric Box	'20102701	1	'20102701	1
17	Terminal Board	'42010258	1	'42010258	1
18	Transformer 48X26G	'43110233	1	'43110233	1
19	Electric Box Cover I	'20102702	1	'20102702	1
20	Room sensor	'390001911	1	'390001911	1
21	Electric Box Cover II	'20102703	1	'20102703	1
22	Main PCB Z71351E	'30227111	1	'30227111	1
23	Capacitor CBB61 3.5uF/450V	'33010010	1	'33010012	1
24	Evap Support	'01072703	2	'01072707	2
25	Fan Fixer	'10312701	1	'10312701	1
26	Water Pump PJV-1415	'43130324	1	'43130324	1
27	Water Level Switch	'45018012	1	'45018012	1
28	Pump Drainpipe	'05230026	1	'05230026	1
29	Right Side Plate	'01302716	1	'01302712	1
30	Pump Cover Plate	'01252713	1	'01252713	1
31	Display Board Z7A351	'30294219	1	'30294219	1

No.	Name of part	GKH42TK1BI		GKH48TK1BI	
		Product Code	ET010N0290	Product Code	ET010N0300
		Part code	Quantity	Part code	Quantity
1	Tube Exit plate	'01382715	1	'01382715	1
2	Body Fixing Plate	'01332701	4	'01332701	4
3	Front Side Plate	'01302713	1	'01302713	1
4	Left Side Plate	'01302711	1	'01302711	1
5	Base Plate	'01222701	1	'01222701	1
6	Rear Side Plate	'01302709	1	'01302709	1
7	Motor Support	'01702701	1	'01702701	1
8	MotorFN35B	'1570411002	1	'15709410	1
9	Centifugal Fan	'10310101	1	'10310101	1
10	Evaporator Linkage	'01072732	1	'01072732	1
11	Tube sensor	'390001921G	1	'390001921G	1
12	Evaporator Assy	'0105941801	1	'01059418	1
13	Water Tray Assy	'20182701	1	'20182701	1
14	Electric Base Plate	'01412721	1	'01412721	1
15	Flow-guide Loop	'10372722	1	'10372722	1
16	Electric Box	'20102701	1	'20102701	1
17	Terminal Board	'42010258	1	'42010258	1
18	Transformer 48X26G	'43110233	1	'43110233	1
19	Electric Box Cover I	'20102702	1	'20102702	1
20	Room sensor	'390001911	1	'390001911	1
21	Electric Box Cover II	'20102703	1	'20102703	1
22	Main PCB Z71351E	'30227111	1	'30227111	1
23	Capacitor CBB61 3.5uF/450V	'33010012	1	'33010012	1
24	Evap Support	'01072707	2	'01072707	2
25	Fan Fixer	'10312701	1	'10312701	1
26	Water Pump PJV-1415	'43130324	1	'43130324	1
27	Water Level Switch	'45018012	1	'45018012	1
28	Pump Drainpipe	'05230026	1	'05230026	1
29	Right Side Plate	'01302712	1	'01302712	1
30	Pump Cover Plate	'01252713	1	'01252713	1
31	Display Board Z7A351	'30294219	1	'30294219	1

No.	Name of part	GKH24TK1B2I		GKH36TK1B2I	
		Product Code	ET010N0650	Product Code	ET010N0620
		Part code	Quantity	Part code	Quantity
1	Tube Exit plate	'01382715	1	'01382715	1
2	Body Fixing Plate	'01332701	4	'01332701	4
3	Front Side Plate	'01302718	1	'01302713	1
4	Left Side Plate	'01302715	1	'01302711	1
5	Base Plate	'01222701	1	'01222701	1
6	Rear Side Plate	'01302714	1	'01302709	1
7	Motor Support	'01702701	1	'01702701	1
8	MotorFN35B	'15709404	1	'15709410	1
9	Centifugal Fan	'10312705	1	'10310101	1
10	Evaporator Linkage	'01074042	1	'01072732	1
11	Tube sensor	'390001921G	1	'390001921G	1
12	Evaporator Assy	'01029453	1	'0102940201	1
13	Water Tray Assy	'20182701	1	'20182701	1
14	Electric Base Plate	'01412721	1	'01412721	1
15	Flow-guide Loop	'10372701	1	'10372722	1
16	Electric Box	'20102701	1	'20102701	1
17	Terminal Board	'4201025801	1	'4201025801	1
18	Transformer 48X26G	'4311022602	1	'4311022602	1
19	Electric Box Cover I	'20102702	1	'20102702	1
20	Room sensor	'390001911	1	'390001911	1
21	Electric Box Cover II	'20102703	1	'20102703	1
22	Main PCB Z71351E	'30227111	1	'30227111	1
23	Capacitor CBB61 3.5uF/450V	'33010010	1	'33010012	1
24	Evap Support	'01072703	2	'01072707	2
25	Fan Fixer	'10312701	1	'10312701	1
26	Water Pump PJV-1415	'01332702	1	'43130324	1
27	Water Level Switch	'45018012	1	'45018012	1
28	Pump Drainpipe	'05230026	1	'05230026	1
29	Right Side Plate	'01302716	1	'01302712	1
30	Pump Cover Plate	'01252713	1	'01252713	1
31	Display Board Z7A351	'30294219	1	'30294219	1

No.	Name of part	GKH42TK1B2I		GKH48TK1B2I	
		Product Code	ET010N0630	Product Code	ET010N0640
		Part code	Quantity	Part code	Quantity
1	Tube Exit plate	'01382715	1	'01382715	1
2	Body Fixing Plate	'01332701	4	'01332701	4
3	Front Side Plate	'01302713	1	'01302713	1
4	Left Side Plate	'01302711	1	'01302711	1
5	Base Plate	'01222701	1	'01222701	1
6	Rear Side Plate	'01302709	1	'01302709	1
7	Motor Support	'01702701	1	'01702701	1
8	MotorFN35B	'1570411002	1	'15709410	1
9	Centifugal Fan	'10310101	1	'10310101	1
10	Evaporator Linkage	'01072732	1	'01072732	1
11	Tube sensor	'390001921G	1	0	0
12	Evaporator Assy	'0102940000801	1	'010294000008	1
13	Water Tray Assy	'20182701	1	'20182701	1
14	Electric Base Plate	'01412721	1	'01412721	1
15	Flow-guide Loop	'10372722	1	'10372722	1
16	Electric Box	'20102701	1	'20102701	1
17	Terminal Board	'4201025801	1	'4201025801	1
18	Transformer 48X26G	'4311022602	1	'4311022602	1
19	Electric Box Cover I	'20102702	1	'20102702	1
20	Room sensor	'390001911	1	'390001911	1
21	Electric Box Cover II	'20102703	1	'20102703	1
22	Main PCB Z71351E	'30227111	1	'30227111	1
23	Capacitor CBB61 3.5uF/450V	'33010012	1	'33010012	1
24	Evap Support	'01072707	2	'01072707	2
25	Fan Fixer	'10312701	1	'10312701	1
26	Water Pump PJV-1415	'43130324	1	'43130324	1
27	Water Level Switch	'45018012	1	'45018012	1
28	Pump Drainpipe	'05230026	1	'05230026	1
29	Right Side Plate	'01302712	1	'01302712	1
30	Pump Cover Plate	'01252713	1	'01252713	1
31	Display Board Z7A351	'30294219	1	'30294219	1

Model: GKH30TK1BI; GKH30TK1B2I;



No.	Name of part	GKH30TK1BI		GKH30TK1B2I	
		Product Code	ET010N0610	Product Code	ET010N0270
		Part code	Quantity	Part code	Quantity
1	Tube Exit Plate Assy	'01382715	1	'01382715	1
2	Shell Assy	'01432703	1	'01432703	1
3	Motor support	'01702701	1	'01702701	1
4	Base Plate	'01222701	1	'01222701	1
5	Right Side Plate	'01302716	1	'01302716	1
6	Rear Side Plate	'01302714	1	'01302714	1
7	Fan Motor	'15709404	1	'15709404	1
8	Centrifugal fan	'10312705	1	'10312705	1
9	Evaporator Assy	'01029487	1	'01029487	1
10	Water Tray Assy	'20182701	1	'20182701	1
11	Diversion Circle	'10372701	1	'10372701	1
12	Electric Box Assy	'01399414	1	'01399400015	1
13	Terminal Board	'42010258	1	'4201025801	1
14	Transformer	'43110233	1	'4311022602	1
15	Electric Box Cover Sub-Assy	'20122054	1	'20122054	1
16	Tube Sensor	'390001911	1	'390001911	1
17	Remote Controller	0	0	0	0
18	Electric Box Cover Sub-Assy	'20122055	1	'20122055	1
19	Main Board	'30227111	1	'30227111	1
20	Capacitor	'33010010	1	'33010010	1
21	Drain Hose Sub-Assy	'05232702	1	'05232702	1
22	Evaporator Support Assy	'01072703	2	'01072703	2
23	Room Sensor	'390001921G	1	'390001921G	1
24	Water Pump	'43130324	1	'43130324	1
25	Water Level Switch	'45018012	1	'45018012	1
26	Pump Drainpipe	'05230026	1	'05230026	1
27	Left Side Plate	'01302715	1	'01302715	1
28	Front Side Plate	'01302718	1	'01302718	1
29	Pump Cover Board Assy	'01252713	1	'01252713	1
30	Display Board	'30294219	1	'30294219	1



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